JANUARY 1959

THE Airman

OFFICIAL JOURNAL OF THE AIR FORCE

And hearts resolved and hands prepared
The blessings they enjoy to guard.

—SMOLLETT
from HUMPHRY CLINKER

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THE Airman

OFFICIAL JOURNAL OF THE AIR FORCE

VOLUME III, NUMBER 1 JANUARY 1959

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Director of Information Services
Office of the Secretary of the Air Force
MAJ. GEN. ARNO H. LUEHMAN

Chief, Internal Information
Office of Information Services
COL. ROBERT B. GOOD

Editor
LT. COL. HARMON H. HARPER

Assistant Editor
DAVE KARTEN

Executive Editor
CAPT. TED R. STURM

Art Director
SMS LESTER B. BOUNDS

Departmental Editor
M/SGT. HAROLD E. BAMFORD

Production and Distribution
RUSSELL M. WOODS

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Editorial Office: THE AIRMAN, Room 2-206 Tempo E, 4th and Adams Drive SW, Washington 25, D. C. Telephone: LIberty 5-6700, Ext. 67393.

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Cover illustration from a painting by Stan Galli, Society of Illustrators, New York.

EVERYBODY READS THE AIRMAN

Sir: *Being one of the readers of* AIRMAN, *I also read its columns eagerly. I used to be an interpreter in an USAF organization in Turkey which is called as TUSLOG Detachment 30. Now I am in my military service in Turkish Army. I wonder if you publish two of my jokes in its columns or not? Thank you very much. If you publish it could you please send me one copy of* THE AIRMAN *in which you publish it? Thanks.*

Irfan Kececi
Ankara, Turkey

During the inspection of the Air Force General, the General was asking some questions to the soldiers.

General. What is your name?

1st Soldier. My name is Hasan, sir.

General. What does your country mean to you, Hasan?

1st Soldier. My country is my mother, sir.

General. Thank you, Hasan. And what is your name?

2d Soldier. My name is Ahmet, sir.

General. What does your country mean to you, Ahmet?

2d Soldier. She is my aunt, sir.

General. Your aunt?

2d Soldier. Yes, sir. Hasan's mother is my aunt, sir.

Besides the equipments, the moon exploring division of the Air Force gave a recommendation letter to the pilot of the *Explorer.* It read: *"To Whom It May Concern. The above-mentioned pilot was a good person as long as he lived in our world. So we can recommend him for a position in Moon or in Heaven. Signed, Secretary of the United Nations."*

As they say in Philadelphia, "Nearly everyone reads THE AIRMAN."

★ ★ ★

AUTHOR! AUTHOR!

Sir: *It's rather difficult to express my feelings upon reading the poem* Last Formation *in the Sept. issue of* THE AIRMAN. *I sincerely believe those were the sentiments of my late brother, Lt. Mitchell Joseph, who died of injuries sustained in a plane crash at Mountain Home, Idaho, in 1943.*

Leander Elizabeth Joseph
Biloxi, Miss.

Sir: *I have the pleasure to inform both you and Major Barnhill of the identity of the author of the poem,* Last Formation. *Aviation Cadet Richard Johnson, Class 54-R, was my roommate at Spence. The poem was written by him for our class book upon graduation from that phase of our training. I lost contact with him after leaving Spence, but learned later that he was killed in a mid-air collision at Laughlin AFB, Tex.*

Lt. Strother Hart, Jr.
APO 864, New York, N. Y.

Major Barnhill's original letter indicated that the author was stationed at Spence sometime late in 1953 or early in 1954. Class 54-R was there from Sept. '53 through March, '54. The evidence certainly supports Lieutenant Hart's claim that the author was indeed A/C Richard Johnson.

★ ★ ★

Sir: *I have made an extensive study of medals and insignia of the United States, and the photos which accompany the story,* In the Name of Congress, *in the Sept. issue are puzzling to me. The eagle on the Army-Air Force Medal of Honor is looking to the left. According to the best information available to me, the eagle should always look to the right toward the Field of Honor. Can you explain why it faces the opposite way on this Medal, the highest that this Nation awards?*

S/Sgt. William Morrison
Offutt AFB, Nebr.

At the time the Medal of Honor was struck in 1862, the concept that the eagle must look to the right toward the Field of Honor had not been officially adopted. As a matter of fact, the original Presidential Seal also was issued with the eagle facing left. In October 1945, President Harry S. Truman issued an executive order for redesign of the Seal changing the position of the eagle's head. At the same time, a similar design change for the Medal of Honor was discussed; however, for the sake of tradition, it was agreed that it should retain its original form.

★ ★ ★

NOT INTENDED

Sir: *Your artistic presentation of the shot to the moon, pages two and three, Sept. issue of* THE AIRMAN, *seems to depict the firing site to be in the vicinity of Russia.*

T/Sgt. Norman Hanel
APO 862, New York, N. Y.

This is purely artwork and is an adaption of one of the probable orbital trajectories that a Moon probe rocket might follow. Note the second illustration at bottom of page seven.

★ ★ ★

FREEZE PROBLEM

Sir: *Let's face it, USAF has a real morale problem on their hands with regard to airmen who have extended periods of service, extensive time in grade, and who are in frozen career fields and are unable to retrain or be promoted. Has any plan been discussed concerning a possible solution to this problem?*

A/1C Clyde White
Mountain Home AFB, Idaho

Officials in the Promotions and Separations Division, DCS/Personnel, Hq USAF, indicate that recognition has been taken of the fact that many airmen in surplus career fields are performing their jobs in an outstanding manner, and that special consideration is warranted. Consequently, a program is under study which will provide for promotion of limited numbers of exceptional airmen in such career fields. If the program is approved and coordinated throughout all the necessary channels, it is hoped it can be implemented prior to the March, 1959, promotion cycle.

Editor's Note: *Where does the Air Force stand in the solution to one of its foremost problems—that of matching personnel to the new developments and the really significant advances in weapon systems?*

Lt. Gen. Emmett O'Donnell, Jr., USAF Deputy Chief of Staff, Personnel, provided the answer to this question in a comprehensive address delivered November 7 at the Chief of Staff's Reserve Forces Seminar. It speaks of plans which will affect every member of the Air Force. It tells of vast improvements in personnel programs, and forecasts future progress of a degree which will both surprise and encourage all dedicated airmen.

The Personnel Program Today

by Lt. Gen. Emmett O'Donnell, Jr.
DCS/P, Hq, USAF

THE central point I want to make is that this fiscal year, beginning last July, is developing as a period of marked transition from the standpoint of personnel. We are getting out of the problem which has plagued us since WW II—that of simple mass retention or trying to keep people in the service. This year we are beginning to get retention—in some areas very good retention and in almost all areas better retention. Retention is up enough that we need no longer aim in desperation at bulk manpower. We can now afford to consider the job that has to be done and the right men to do it. We can afford to pick and choose, to turn down those who can't handle the job the way we think we want it handled. Much of our personnel planning and action during the course of this year is being aimed at procedures which will give us skilled and efficient personnel to match precisely our individual job requirements.

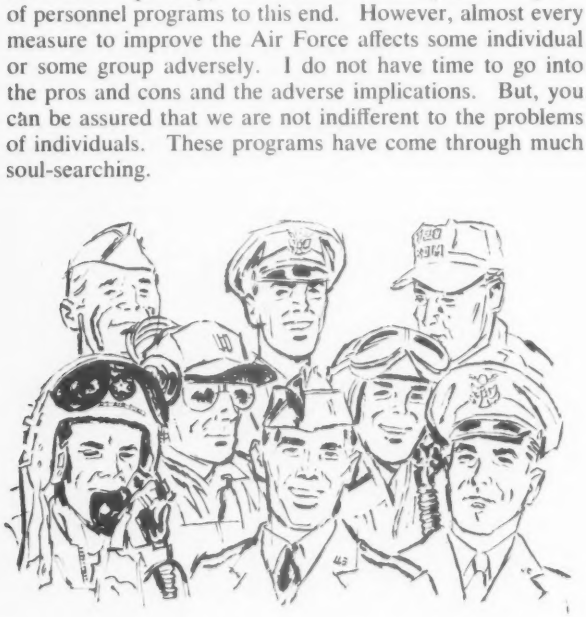
To quote an unclassified line from the USAF Long Range Wartime Objectives Plan, "The optimum performance of modern weapon systems can be realized only when the quality of our personnel has reached the highest standards required."

For almost the first time since WW II we can give constructive consideration to this goal.

In short, where you have heard us talk about *retention* as the *number one problem;* we will in the future be talking about *selective retention* and *quality control*. You will appreciate, I am sure, the fact that our ability to embark

on a program which is selective indicates a real stride toward a force of personnel able to accomplish the Air Force mission, whatever the technological developments may be.

I must assume that your first interest is that of insuring Air Force capability, and I will stress the positive aspects of personnel programs to this end. However, almost every measure to improve the Air Force affects some individual or some group adversely. I do not have time to go into the pros and cons and the adverse implications. But, you can be assured that we are not indifferent to the problems of individuals. These programs have come through much soul-searching.



Specific Personnel Subjects: Officers

I would like to consider the officer group first, and then the airman area. The two groups are dissimilar, both as to problems and with regard to the degree of current effects on the group. There is, for example, a much longer reaction time in the officer group. Most changes are slow and aimed several years away. Consequently, results in the officer retention picture are not yet as concrete as are those in the airman area.

Officer Retention Program

An officer retention program was initiated in April 1956. It is primarily a motivational program aimed at the individual officer, coupled with personnel programs designed to enhance the retention climate. Commanders are required to interview and counsel young officers, pointing out the advantages in an Air Force career.

The most immediate requirement in the officer program is to retain sufficient numbers of trained personnel to maintain and operate the complex weapon systems employed by the Air Force. This includes navigators, aircraft controllers, electronics officers, and research and development officers, as well as pilots. The crux of the officer retention problem is the necessity of changing the young, "specified-tour" officer's goal in life to an Air Force career. Most have no experience with the civilian economic world. As we have found out in our recent recall program, an honest comparison is often more favorable to the Air Force than most suspect. Personalized counseling by commanders is a most effective means of achieving this.

In 1957, we determined to do something about the limited use we were getting from our "short-tour" pilot and navigator officers. By the time they were operationally trained, only a few months remained in their active careers. We raised this to an active duty commitment of four years after the completion of flying training. We then treat them as career officers. This increased significantly the operational usefulness of the group, with direct improvements in operational stability and readiness. It, also, enabled us to reduce the volume of flying training and, in that way, the ratio of training costs to the operational force.

A by-product is the higher retention rate which results from this group. The longer officers spend in the service, the more likely they are to decide on an Air Force career. This program in itself acts to freeze out the more positively noncareer types, leaving us a group more inclined to career status from the start.

To reduce the waste in training, restrictive actions have been taken to limit attendance at the more costly technical courses to officers who will remain on active duty beyond the minimum period.

To remove some of the annoying features of the officer career, we have instituted a number of lesser administrative actions such as: rotation out of assignments in skills peculiar to less desirable locations; controls to prevent consecutive assignments to "hardship" areas, and the like.

Because of the adjustments in the career statistics caused by the institution of the longer tour of duty for rated officers, comparisons between statistical data for the last three or four fiscal years is difficult. However, I have chosen the latest statistics for the group of officers commissioned in fiscal year 1956 as being most nearly representative of actual career intentions of the younger officers in these groups.

	Career Minded	*Undecided*	*No*
Regular (FY 1956)	72.2	24.5	3.3
Career Reserve (FY 1956)	45.5	37.6	16.9
Non-Career Reserve (FY 1956)	9.4	24.9	65.7

These figures give you some idea of where the officer retention problem lies. However, they were gathered before the pay bill was enacted. Both the increase in obligated tour and the pay bill are too recent to reflect in our statistics. We will not be able to show conclusive results in trends in officer intent for some months to come.

Regular Officer Augmentation

One of the most evident improvements affecting officers has been the Regular Officer Augmentation Program. The legislation for it was passed in 1956, but the implementation of the main buildup is just now being completed. From the standpoint of the individuals affected, some 23,000 Reserve officers will have been given a firm career by transfer to Regular status. (As a matter of informa-

tion, some 70,000 Reserve officers applied for Regular commissions.) There will then be a total of about 49,000 Regulars by June of next year. After that time, we will work toward a goal of 55,540 in 1963. (The manning goal of 55,540 is an administrative restriction established by the President, and is subject to periodic review.) However, our total authorization under law is 69,425. We are actually building toward that goal, appointing officers against an ideal (or optimum) distribution pattern for this larger number. In the 4 to 20 years-of-service area, we will have in 1959 the officers required for a 69,425 Regular force. The difference between the figures of 55,540 and 69,425 is largely explained by the near void of personnel available for appointment with above 20 years of service. While relatively empty now, the upper area (above 20 years) will, obviously, be filled by natural progression during the next ten years. At some time during that period it will be necessary for us to obtain a manning goal closer to 69,425 in order to maintain a proper input ratio of officers in the lower age and years-of-service groups.

There has been some misunderstanding of this difference between the manning goal and the larger authorization. As you can see, we are actually building toward a professional career force on the basis of 69,425.

This augmentation gives the Air Force a substantial ratio of Regular officers which makes for a more stable force, and one more attractive to the young officer looking toward a full career.

Officer Career Outlook Generally

In general, the personnel system will be directed toward a competent and efficient officer corps—matched to the technical development of the Air Force and its weapon systems.

We intend to bear down on ineffective officers, of course. Increased emphasis on this score has resulted in the identification of more than 100 cases in the first three months of the action, as compared with 124 cases in 1956 and 148 in 1957. As you can see, the numbers involved are minor.

Our promotion systems are now aimed at improved quality, also. We have gone over to the best qualified system of promotion to the grades of major and above for active duty officers. To the same end in our regular promotion system, we are looking toward the *DOD Career Officer Management Program* for the legislative changes which will give us greater leeway to move the best along faster and trim out the *less* effective. You are, perhaps, already aware of the details of this. It has received wide publicity.

One disadvantage is that we are maturing as a career service. The airplane and the Air Force "are of age." The earlier promotion we have known is a thing of the past. Consequently, we are having to adjust to the more normal pattern of permanent promotion. This lends emphasis to our efforts to single out the best for promotion.

Reserve Officers

Naturally, many of the remaining Reserve officers on duty after we have completed the augmentation program will, in all probability, not be able to look forward to the full career we can offer a Regular. I should point out that, ultimately, some similar selective process would have been necessary to determine which Reserves should stay on for a full career. Nevertheless, augmentation does effectively determine the major part of that question. We are exerting every effort to develop a new career pattern for qualified Reserve officers who, because of numerical restrictions, cannot be given Regular status.

The underlying aim of this is the attempt to insure retention until the individual is qualified for 20-year retirement; with an alternate financial guarantee for those involuntarily separated. The heart of this effort is the "Term Retention Contract" proposal. Its purpose is to provide an improved status for Reserve officers on active duty with the Armed Forces. The principal features of this proposal are (1) mandatory rather than permissive active-duty contracts for Reserve officers on active duty after the first two years of commissioned service; (2) two months' basic pay for each year served under a completed contract whether or not released involuntarily; (3) two months' basic pay for each year served under contract if released involuntarily while rendering satisfactory service, plus one month's basic pay and allowances for each year of an uncompleted contract; and (4) after 14 years of satisfactory active-duty service, persons affected will either receive a Regular commission, be given a contract for six years, or be released from active duty with appropriate readjustment pay. This will give us a carefully selected career force of officers in the 14-and-over year groups. The most recent draft of this proposal was submitted to Congress on 12 July 1958, but no hearings were held due to pressure of other measures. Hearings are expected during the next session of Congress.

Airmen

Turning now to consideration of the enlisted area, I will take up first the general subject of airmen retention.

This is the problem area which has shown so much improvement. The statistics here are the foundation of our brighter prospects. In the past four years we have progressed from a low reenlistment rate among our first term enlistees of 14 percent in 1955, to 29 percent in 1956, 36 percent in 1957, and, now 40 percent in 1958.

Our reenlistment rate among career airmen—those on their second or later enlistment—was at a low of 70 percent in 1955, but has been above 91 percent for the past two years.

In terms of force composition, we have progressed from a 1955 ratio of three first termers to one career airmen to an approximate one-to-one ratio today. It is obvous what this means in terms of average experience level and operational effectiveness. (Specific figures: Nov. '54,

73.4 / 26.6; May '56, 63 / 37; May '57, 58.1 / 41.9; May '58, 51.8 / 48.2.) (Rates include personnel on initial Air Force enlistment, with prior service in other services, as first term; this reflects useful training level.)

We have achieved these results while generally tightening down on quality. We instituted new reenlistment criteri in January 1957 and these have been tightened further in the past 18 months. Among all airmen separations, the ratio of airmen who have been declared ineligible to reenlist has risen from about 15 percent in 1955 and 1956 to 35 percent in 1958. (All figures are average for fiscal years.)

The achievement of a ratio of half career airmen is,

thus, even more significant, when considered in conjunction with these critically restrictive reenlistment controls. The whole pattern should be thoroughly encouraging to anyone concerned over the problems of maintaining the increasingly more complex equipment of the Air Force.

Proficiency Pay

Of course, the reenlistment rates I have mentioned are average for all career fields. A number of career fields have substantially lower reenlistment rates. Some of these are: intelligence, air traffic control and warning, radio and radar systems, and armament system maintenance. One of the new developments which we hope will work to produce like results in these areas is *proficiency pay*.

The Air Force has just implemented its program for this pay. We have designated 30 skills as the most critical. Approximately 13,000 airmen in these skills will receive an additional $30 per month as proficiency pay. Ultimately, some 107,000 airmen in critical skills will be on the proficiency pay rolls. Progress toward this total will be phased over a period of four years.

"Proficiency Pay" was part of the Cordiner-based pay bill, as was the change in our grade structure for airmen. This same legislation gave us two new grades at the top of the enlisted structure.

E-8 and E-9 Senior and Chief Master Sergeants

The initial group of promotions to these new grades was made in September. Two thousand master sergeants were promoted to the grade of E-8, Senior Master Sergeant. We plan to promote an additional 3,000 to E-8 in March 1959. We do not plan any promotions to E-9, Chief Master Sergeant, until December 1, 1959. Subsequent promotions over a five-year period will result in a total of 14,000 senior master sergeants and 7,000 chiefs. All of these spaces come out of our former authorization of 56,000 master sergeants. The general promotion opportunity remains unchanged, but these new grades permit us to differentiate considerably between levels of responsibility within the master sergeant group.

Quality Control

The ratio of 35 percent ineligible for reenlistment (out of total airmen separations) indicates the pressure we have placed on attaining a "high-quality" force. I would like to discuss now, briefly, some of the mechanics, reenlistment control being only a part of the overall picture. Controls are being applied in *original enlistment processing, selection for technical training and retraining,* various *procedures to identify and eliminate the unsuitable,* and, the before mentioned *reenlistment controls.*

Preenlistment aptitude testing was instituted in April. It has enabled us to match airmen procurement against actual requirements for input into training and in specific skills. In the past, we had difficulty filling our high aptitude requirements and had to enlist some who proved to be untrainable. Initial results of this testing program have been highly gratifying. We have doubled the "past average take" of high aptitude people, and have enlisted no airman who did not possess a potential for training.

In regard to our elimination program, we were eliminating a monthly average of 570 unsuitable, untrainable, and unfit airmen in 1955, and approximately 1,400 a month in fiscal year 1958 as of April. As to current trends for FY '59, the latest figure is 1,900 for the month of August.

In the reenlistment phase of our program, we aim to deny reenlistment to those who have not made satisfactory progress or who do not have aptitudes which will qualify them for further training. (This phase of the program is illustrated in the ratio of 35 percent ineligible for reenlistment.) We will further tighten the criteria to make whatever changes are appropriate in meeting the demands of more technical weapon systems.

A major feature of the "quality control" program is that it includes maximum training opportunities for those career-motivated airmen we retain. The retraining program instituted in January 1957 has resulted in more than 12,500 approved applications. As of now, more than 5,400 of our airmen have completed the retraining courses. We are ready to implement a "super advanced" training program for 1,000 airmen in the highly technical radio-radar system career field in December.

Future Planning and Problem Areas

In painting what has been a relatively bright picture, I have laid stress on the accomplishments we have made with what we have been given to work with. But a 48.2 percent career force of airmen is not the final answer. Our ratio of missile and electronic skills to the less complicated jobs gets ever higher. We still have problem areas and they will require effort.

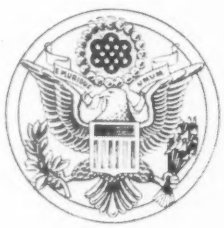
Developing an effective professional force depends as much on our providing an American way of life to those

we want to keep as it does on any program of ours to eliminate the unsuitable.

Personnel Facilities

First, and foremost, of the things we need to make the Air Force a decent place to work and live is a sufficient number of "adequate" quarters. "Housing" is going to be the word you hear most in the near future. I am inclined to believe that the housing construction we have already received has been the main element in our increased retention. While the new pay system is conceded to be a major factor, it is still too early to have decent statistics on its effect. Our first statistics indicate that the immediate increase is not spectacular.

The current active housing program authorizes construction of some 75,000 units. These are authorized under several different sub-programs, including "Surplus Commodity" housing, "Capehart" housing, and the smaller Military Construction Program (which includes some



7,000 units). The future program—for approval in fiscal year '60—is to provide 22,000 units at some 58 different sites. We are, in addition, acquiring the Wherry housing projects, which will permit us to improve the standards of adequacy in that area. Another program, which has given us 5,000 units overseas, is the rental guarantee program. Under this, the Air Force guarantees private investors that the housing will be kept occupied.

This is the area in which the greatest return can be expected. When the individual in the Air Force no longer has to choose between his career and a decent living standard for his family, we shall have reached the goal of a professional force.

A companion problem is the state of other personnel facilities. From FY '55 through FY '58, the personnel facilities portion of the annual construction program was increased from six (5.5) to 13 (12.5) percent. In FY '59, two items, troop housing and dining halls, amount to $46 million ($45.8). When it is considered that only a portion of the requirement can be submitted in any one program, and that $46 million is only part of the total required, the figure gives an indication of the overall deficiency.

Barracks, BOQs, and the other facilities that go into the pattern of life in the Air Force must be up to decent standards. A lot of cash in the pocket and a room in a WW II temporary structure is not the combination which will attract the type of man we need. Needless to add, it is the young officer and the first term airman who are most influenced by these factors.

Missile Operations and Changes in Personnel Environment

A number of new personnel problems have arisen with the advent of missiles and the location of electronic detection and control sites. We are getting away from the large Air Force base and its runway and breaking up into smaller units. More to the point, the missile and electronic warning systems are geographically situated substantially without regard to the location of cities and population centers. This will create problems as the ratio of Air Force personnel at these locations increases. Modern America is urban, and many of these locations, despite being in the ZI, will be (and are) considered remote and isolated.

In the missile area, another problem will be that of a monotonous routine. The obvious results of the airman's efforts as evidenced by flight activity will be lacking in missile units. We cannot afford the loss in training of more than a token number of these expensive missiles in live firings. Consequently, we will be hard pressed to maintain the high morale and sense of importance the personnel in these units now have.

These problems are already showing up and are receiving a lot of attention. One of the important measures which will have a bearing on this problem is the proposal for remote and isolated duty pay.

The Cordiner Committee report included a study concerning incentive pay for remote and isolated duty. The study recognized the problems of undesirable duty stations throughout the world. The committee recommendations included a sliding scale of payments expressed as a percentage of the member's basic pay, in increments of 10 percent, 15 percent, 20 percent, 25 percent, or in exceptional cases 40 percent, depending upon the degree of applicability of the criteria. The Air Force considers these recommendations desirable, and has recommended that the Department of Defense develop a legislative proposal embodying such recommendations for the 1959 legislative program. The legislation implementing the Cordiner recommendations in this would cost the Air Force, for FY '60, approximately $16,000,000.

Conclusion

In this brief attempt to cover the whole personnel situation in the Air Force it is apparent that there are still real personnel problems to contend with. But, there is now cause for much more than cautious optimism. We are reducing our personnel problems to manageable proportions. The people of the United States can be assured that they are getting ever more highly trained and efficient personnel for the personnel dollar. We are making undeniable strides toward a trained professional force. What is most important, we can plan on a force capable of supporting our highly complicated weapon systems.

This is, of course, in large part dependent on continued improvements in the personnel system. More housing, and the other career improvements we are after, can be expected to produce measurable results. These are now constructive measures—we are no longer trying merely to plug the dike. There is much to be done, but you should feel that the Air Force has now a solid foundation of demonstrated capability on which to build.

USAF's Military Suggestion Program has been given a new shot in the arm with . . .

Bucks for Ideas

An important adjunct to the Military Suggestion Program has been added to the fiscal year 1959 competition with the announcement that four major monetary awards, ranging downward from $1,500, will be available for the first time.

Officials in the Awards Branch, DCS/Personnel, Hq USAF, expect the winners to be announced within a week to 10 days following the close of competition at the end of June. The selection committee will meet immediately following the close of the year-long competition, and final announcement of the four major awards should be forthcoming within a very few days.

Details of the competition are outlined in AFR 35-12, dated 18 August 1958. An attachment establishes the four FY '59 awards as $1,500 for first place, and $1,000, $500, and $350 for second, third, and fourth places respectively.

USAF has long encouraged all military personnel to submit suggestions for improving the effectiveness and efficiency of operation. Present legislation, however, does not authorize cash prizes from appropriated fund sources. As a result, the program has suffered from lack of participation, and approval of the cash medium has long been sought. Support for this year's program will come from a special allocation from the Air Force Central Welfare Fund, and officials will be watching closely for changes in participation percentage.

With this in mind, supervisors are being urged to encourage airmen to submit suggestions under the expanded program. Often in the past, supervisory personnel have been known to take personal affront at management suggestions made for the operation of their department. Officials who are monitoring the program feel that this is a natural reaction; however, they point out that no matter how efficient an individual may be, no one is capable of knowing everything about the operation of any department, and one of the aims of the expanded program is to ferret out ideas which might otherwise never see the light of day.

Among the several other additional objectives, the program is also expected to go far along the road toward making all airmen feel they have an active hand in USAF management. Additionally, it is expected to facilitate the dissemination of beneficial suggestions and provide appropriate recognition to those participating in the program.

Major air commanders have been provided with extensive leeway in developing and operating their own military suggestion programs, provided, of course, that they coincide with the objective of the overall USAF-wide project. No moves have been made to standardize the presently-operating or newly-planned major air command programs although several suggestions are outlined in the governing regulation. These include the use of letters or certificates of commendation, three-day passes, appropriate USAF decorations such as the Legion of Merit or Air Force Commendation Medal, and lesser cash awards at local levels.

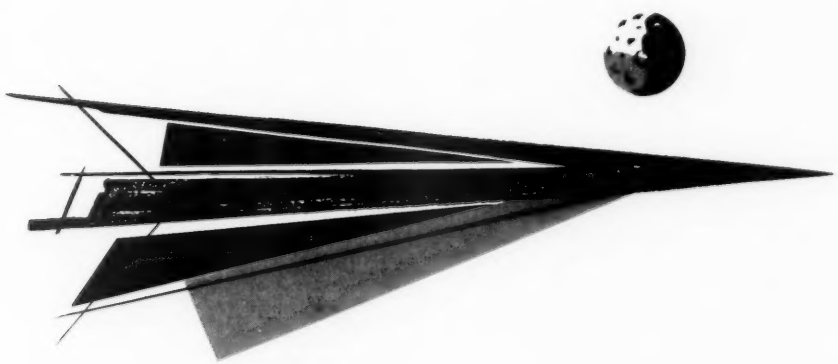
Qualifying suggestions for USAF-wide competition will be forwarded throughout the year to assure that each receives proper evaluation at headquarters level and that the earliest possible announcement of the annual winners may be made. Complete instructions on submission of suggestions from both major commands and from other military and government departments are also contained in the regulation.

Generally speaking, only suggestions which meet certain clearly outlined specifications will be considered for final awards. Included will be those which are considered to have potential Air Force-wide application and provide a first-year tangible saving of $50,000 or more, or an intangible benefit of extraordinary value and general application.

Planners have long believed that lack of a monetary award program for USAF military personnel has been contributory to the fact that many airmen do not participate in the suggestion program. With the inauguration of cash awards, anticipation is that the program will reach a new high in participation during the coming year.

IN my opinion, our military services today are faced with the most difficult tasks they have ever encountered. Scientific and technological developments—some of which are years ahead of anticipated achievements—are resulting in revolutionary changes in weapon capabilities. This necessitates continuous and simultaneous analysis of our techniques, plans, equipment, installations, and manpower. Only through such appraisal can essential modifications and adjustments be promptly effected in alignment with the demands of progress. To survive we must *keep pace with these developments.*

General Thomas D. White
Chief of Staff, USAF



1958 REVIEW

pages 10 through 24

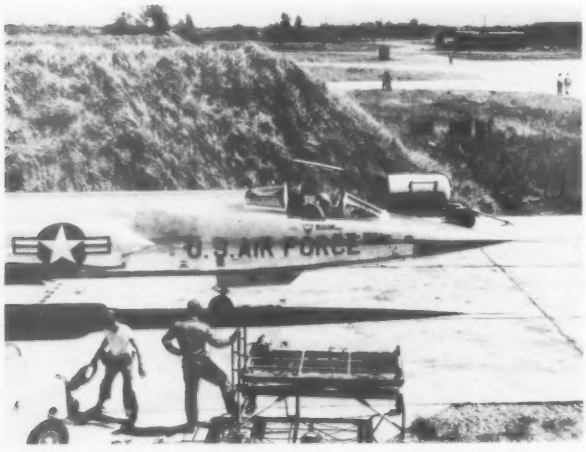
OPERATIONS

Modern general war being what it is, we all know that we will not have an opportunity to build striking power after we are attacked. We have to have the force now, *and it must be ready to use. We* have it *and it is ready.*

We must plan our operations in such a way as to blunt the enemy's first move, and to counter it—if necessary—with a hail of destruction that he could not survive. Our entire force structure is geared to do exactly that.

LT. GEN. D. C. STROTHER
DCS/Operations, USAF

East meets West at Taoyuan Air Base, Formosa. Chinese laborers help airmen erect accommodations for TAC's Composite Air Strike Force.



When Communist aggression posed a threat to peace in the Far East, TAC's Composite Air Strike Force deployed overseas to support forces of Nationalist China. Ground crewmen of the 83rd Fighter-Interceptor Squadron watch their charge move out for engineering flight.

View on the flight line at Adana, Turkey, July 1958. When U. S. forces were ordered to the Middle East to stabilize an ominous situation in Lebanon, TAC's Composite Air Strike Force was airborne and on the way to Turkey within hours.

Operational Capability is the vineyard in which the fruit of all Air Force effort is harvested. The daily work of every airman—from recruiter to clerk to chief of staff—is directed toward the ultimate goal of peak performance in operational squadrons. In the deadly serious business of preserving the peace and guarding the security of the Free World there is no substitute for qualitative superiority.

During the year just ended the United States Air Force demonstrated significant progress toward even greater sophistication in the areas of combat readiness and operational capability.

Since the number of hours in each day remained fixed at 24 during 1958 the Strategic Air Command found no occasion or opportunity to increase the time spent in "ready" status. SAC crews continued to fly around the clock—but greater dispersal, new weapons, refinements in techniques, and technological advances all added to the potency of the world's greatest deterrent to global war.

Air defense and airlift capability made dramatic seven-league strides forward during the year as the SAGE system and new aircraft respectively introduced a more polished approach to mission requirements.

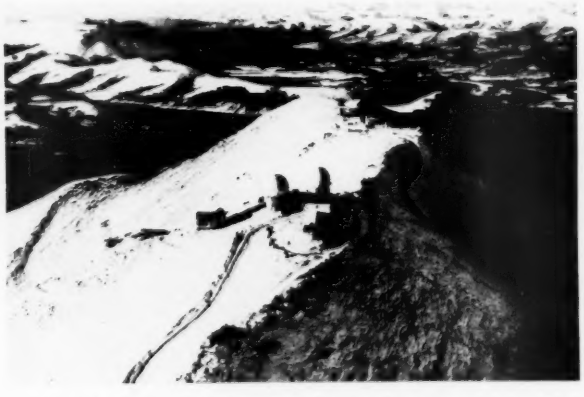
On two momentous occasions the eyes of the world were turned on the Tactical Air Command as Composite Air Strike Forces deployed to opposite sides of the globe in support of United States policy in the Middle East and the Formosa Straits.

The manifestation of the Air Force's operational success is as evident as it is simple: Peace continues to endure in the world.

This MATS *Globemaster* pictured on the flight line at Adana, Turkey, ferried U. S. troops to Beirut, Lebanon. Presence of American forces eased tension and averted a threat to world peace.

Maj. Gen. Henry Viccellio, commander of TAC's Composite Air Strike Force, made the journey to Adana in a C-130 *Hercules*. *Hercules* transports airlifted personnel, parts, and supplies in support of TAC's supersonic tactical aircraft. →

A revolutionary concept in air defense became a reality in June 1958 when the first SAGE system became completely operational.



The air defense shield guarding North America acquired greater effectiveness in 1958 with new AC&W sites in the far North.

This "line-up" in Turkey might be duplicated in any part of the Free World as *Airpower Guards the Peace*.

Borrowing from television jargon, 1958 can be classed as a "Year of Decision" in personnel policies. The actions add up to an emphatic plus and a . . .

GIANT STEP FORWARD

First phase of the quality control program was voluntary retraining, inaugurated two years ago. 15,000 applications have been received and approximately two-thirds of that number reschooled and assigned in critical fields. Supplementing voluntary retraining during 1958, *directed* retraining began with quotas of more than 9,000 levied against the most surplus skills in major commands.

First senior master sergeant promotions were announced in September as part of the overall personnel action authorized under provisions of Public Law 85-422. Semi-annual hikes to both SMS and E-9 (Chief Master Sergeant) are expected to be inaugurated this year.

Review of the 1958 entries in the personnel profit and loss ledger reveals a conspicuous absence of red ink. A quick glance has you snatching for rose-tinted glasses which you find you're not wearing.

What you're looking at is fact—and the facts are overwhelmingly good. Beginning with Public Law 85-422—the "pay" bill which included a good deal more than pay alone—and traversing the entire list from overseas travel, retraining, and housing, to medical facilities, the outlook remains good.

Major news in the eyes of most airmen probably centers on Public Law 85-422, the Military Pay Increase Act of 1958. Addition of two new pay grades, E-8 and E-9, and proficiency pay were included in the bill along with a basic pay increase, effective in June. The bill authorized increases under the other two provisions "upon implementation." Both steps were inaugurated in 1958 although complete integration will be gradual and neither will reach full flower for several months. (See, *Airman's World,* Sept. issue and *Pro Pay's Here,* Nov. issue.)

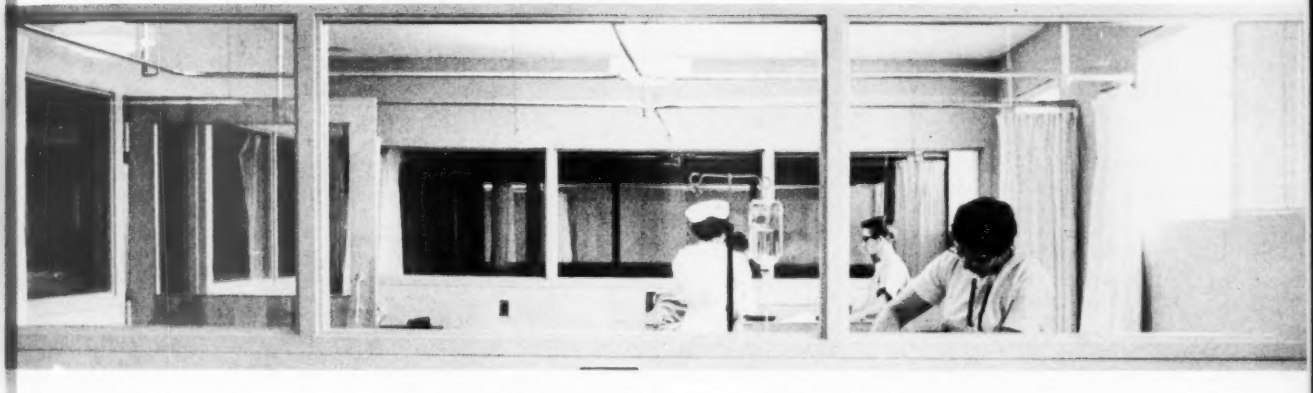
One of the phrases which repeatedly cropped up in personnel problem discussions was "quality control." A many-faceted project, it might best be identified as a series of separate programs, linked by a thread of "togetherness."

Underlying aim is general improvement in Air Force-wide efficiency. That the approach is positive is indicated by the few elements of the program which have been introduced. Several others in planning or already programmed for future adoption will be phased in gradually.

At year's end, USAF was still reporting a shortage of more than 23,000 personnel in critical fields. New skills and new weapon systems contributed to the majority of this shortage. The problem, however, was more than simply recruiting and training to fill these short slots because overall strength was at the maximum level. The answer lay in surplus fields where more than 22,000 men are assigned above authorizations. Retraining of those who have the qualifying aptitudes is the obvious answer and the retraining program is being expanded accordingly. (See, *Retraining Revision,* June issue and *Airman's World,* Aug. and Nov. issues.)

Some criticisms and dissatisfactions have been voiced over revisions in dependents' medical care. In reality, the adjustments offered expansion in many facets and reduction in very few others, while on-base medical facilities construction helped ease the need for civilian medical care. (See, *Revised Dependents' Medical Care,* Oct. issue.)

52,000 Capehart units, (12,000 available, 30,000 under construction, and 10,000 in the design stage) brightened the housing picture. USAF also took over 31,000 of the 40,000 existing Wherry units. Of those acquired 7,500 have undergone complete repairs with money appropriated for work on the balance.



An active and progressive expansion program is underway for construction and modernization of USAF hospital facilities. During 1958, eight such installations were completed boasting a capacity of 1,080 beds but expandable to 2,150. Construction also began on an additional nine with total capacities of 679 beds, expandable to 1,250.

Adoption of overseas air travel for all USAF members is resulting in savings of time and money, reduction of processing red tape, and increased efficiency for everyone. In years past, airmen and their families who fell heir to air space accommodations counted themselves extremely lucky. Today, unless medical or personal reasons dictate otherwise, travelers are assured of aerial movement.

THE AIRCRAFT

When firearms were first introduced into military organizations, their usefulness in deterring war followed this concept: "The closer you can get the muzzle of your gun to the temple of a potential aggressor, the less likely he is to attack you." Today closeness is not measured in feet, yards, or miles. Hours, minutes, even seconds are the scaled elements. The clock has substituted for the yardstick. We must continue to progress with weapons, weapon systems, and support equipment until our ability to react and retaliate against aggression is virtually simultaneous with the overt aggressive act itself.

LT. GEN. C. S. IRVINE
DCS/Materiel, USAF

Built for MATS by Douglas, the C-133 has four T-34 turboprop engines. Its span is 179 feet, length 152 feet, and height 48 feet. With maximum gross takeoff weight of 282,000 pounds, this huge plane is capable of carrying more than 100,000 pounds of cargo over long ranges. It has a crew of four. In December a Douglas C-133 *Cargomaster* chalked up a new milestone when it landed at Dover AFB, Del., with heaviest load—117,900 pounds—ever carried on one aircraft. The giant turboprop is the latest addition to MATS' transport fleet.

KC-135 jet tanker-transports can refuel supersonic fighters and long-range bombers at high speed and high altitude; give USAF added striking power and flexibility. *Stratotankers* set new distance, speed, and airlift records in 1958. Powered by four PW J43W turbojets; speed more than 600 m.p.h.; ceiling 42,000 ft.; crew of four. Can carry 80 passengers or 50,000 lbs. of freight; equipped with high speed flying boom. Span 130 ft., 10 in.; length, 136 ft., 3 in.; height 38 ft., 5 in.; gross weight, over 250,000 lbs.

IF the Wright brothers could come alive and see the USAF of January 1959 they'd have a difficult time recognizing their flying machine.

Today's advanced jet aircraft are modern electronic weapon systems with unheard of speed, range, and sting power. Time and again during 1958 they demonstrated their capabilities by establishing new distance, speed, altitude, airlift, and firepower records.

They included: KC-135 nonstop, nonrefueled distance mark, Tokyo to Azores, 10,229 miles in 18 hrs., 47 minutes; speed (1,404.09 m.p.h.) and altitude (91,243 ft.) records by the F-104; a B-52 distance mark (6,233.98 statute miles) in a closed course without refueling; heaviest load (117,900 pounds) ever carried on one aircraft (C-133 *Cargomaster*), and numerous other records.

Also during the year just ended a Lockheed C-130 *Hercules,* now operational with TAC, set a nonstop nonrefueling distance record for turbine-powered aircraft, flying from Tachikawa, Japan to Hawaii in 10 hours, 44 minutes. In the Middle East crisis, an armada of C-130s flew from ZI bases to Adana, Turkey, in 25 hours, arriving 35 hours after the alert was sounded.

As of 1 January 1959 our long-range nuclear strike force consists of B-47s and B-52s supported by KC-135 tankers (B-36s are being phased out of the inventory as B-52s become available.) Our retaliatory reach will be extended sharply in 1959 with B-52G "missile platform" bombers which have all-weather and increased penetration capabilities — can span

F-104, holder of the world's speed title (1404 m.p.h.) and altitude mark (91,243 feet) has inflight refueling provisions which give the Lockheed ultrasonic *Starfighter* globe-circling range for its assignments with TAC's Composite Air Strike Forces.

oceans, strike anywhere in the world with nuclear weapons of desired yield, and return to SAC bases without refueling. Our first supersonic bomber, the B-58 is now in production and undergoing evaluation tests.

New bombers under development, the B-70 chemical bomber, which will be capable of speeds in the order of 2,000 m.p.h., and the nuclear bomber which will be capable of extended range, will add greatly to the potency of our manned bomber force.

USAF's manned fighter force now contains F-86Ls, F-89Js, and more and more Century Series F-100s, F-101s, F-102s, F-104s, F-105s, and F-106s are being received into our inventory. We also have the F-108 under development. This interceptor, with a speed in excess of Mach 2.0, a ceiling of over 50,000 feet, and the ability to range at long distances from its base will provide quick response to initial warning given by outlying early warning stations.

These aircraft will be equipped with their own high powered radar and directed into radar contact by the early warning stations. They will have built-in capacity to press the attack on their own with air-to-air missiles and be capable of destroying air-breathing attack systems at extreme ranges.

As we enter a new year the Air Force looks forward to maintaining its progress in the development of still more efficient aircraft with longer ranges, greater speeds, and capable of flight at higher altitudes as an essential part of the integrated force of piloted and unpiloted systems that will constitute tomorrow's Air Force.

One of the fastest (Mach 2) and highest flying all-weather interceptors ever flown, the *Delta Dart* F-106 interceptor can be armed with guided missiles and nuclear rockets for its mission of stopping enemy bombers.

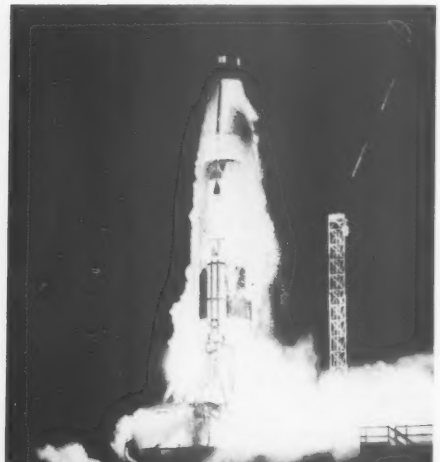
SAC's retaliatory reach was extended sharply last year when the B-52G missile platform bomber was successfully flown. The modernized *Stratofort's* supersonic stingers—North American *Hound Dog* missiles—suspended under each wing give "G" target-smashing capabilities over enemy territory. A new integrally sealed "wet wing" contains major portion of the bomber's fuel, enables it to span oceans and return to ZI bases without fueling.

North American twin-jet T-39 *Sabreliner* cruises at 500 m.p.h., and has 1,400-mile range.

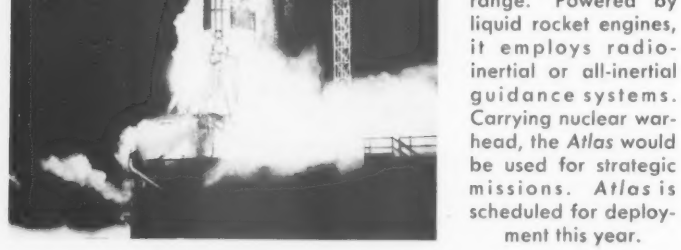
THE MISSILE YEAR 1958

Today we must recognize that the only thing we can be sure of in the military picture is that technical changes will continue at an ever accelerating rate. Thus the criterion of success for a military service has become the ability to conceive, to develop, and to operate weapon systems which take the fullest advantage of scientific and engineering advances.

MAJ. GEN. BERNARD A. SCHRIEVER
Commander, Air Force Ballistic Missile Division



Convair *Atlas*, America's first ICBM now nearing operational status, has speed in excess of 15,000 m.p.h. with 5,500 NM range. Powered by liquid rocket engines, it employs radio-inertial or all-inertial guidance systems. Carrying nuclear warhead, the *Atlas* would be used for strategic missions. *Atlas* is scheduled for deployment this year.



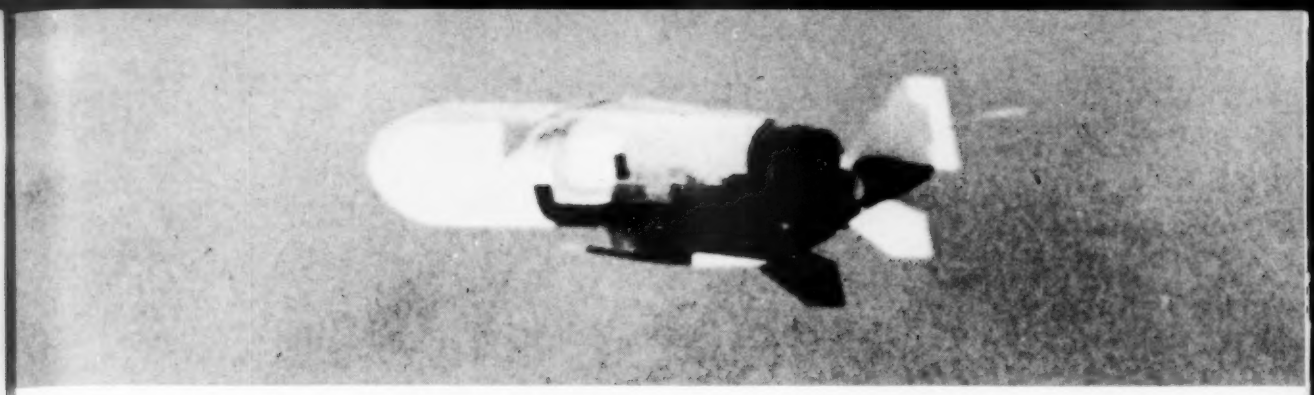
Northorp *Snark* is capable of carrying a nuclear warhead 5,000 miles. The *Snark*, an air breather, is powered by a Pratt & Whitney J57 turbojet with a thrust rating of approximately 10,000 lbs. SAC's first *Snark* missile unit will become operational at Presque Isle, Maine, this year.

AIR FORCE missile development moved ahead at an accelerated pace in 1958.

The guided missile and intermediate range ballistic missile blossomed into maturity and reached operational status. The intercontinental ballistic missile was still tomorrow's weapon but we began to master its technical complexity to make it a practical weapon. American industrial and scientific ingenuity began producing and testing ICBMs. And, during the year, missilemen—the teams that will fire them—were training hard at factories, launch sites, Vandenberg AFB, Calif., and other bases in various parts of the U. S. so that they would be proficient to operate the first and second generations of Air Force missiles as they become operational.

Historians will remember 1958 as the year we met the challenge of the ICBM. They may well remember it also as the year the USAF took a giant step closer to operational ballistic missile capability. Despite many problems, goals were made more stringent in terms of missile reliability, simplicity, reaction time, and overall operational effectiveness. Simultaneously, time schedules were shortened; deliveries and training speeded up.

"Today," says Maj. Gen. Bernard A. Schriever, commander, Air Force Ballistic Missile Division, "we are at least one year ahead of development schedules considered impossibly optimistic four years ago. The experience and know-how acquired in our program provides a proven, solid, ex-



McDonnell *Quail* is an air-launched decoy missile developed for SAC to penetrate and confuse enemy air defenses. Powered by a GE J85 jet engine, it can be launched from a B-47 or B-52 upon approaching the target. Has been successfully flight tested.

pandable foundation for future U. S. advance in missile technology."

On January 1, 1959, the USAF missile picture looked like this:

THOR production well under way and crew training intensified. The first *Thor* missiles to be furnished under an agreement with the United Kingdom were announced by the U. K. to have been delivered in September for operation by RAF personnel. Air Force personnel were being trained to operate the Army-developed *Jupiter*.

ATLAS program progressing ahead of original schedule. First successful test flights completed during '58 under *Atlas'* own guidance system and with all three engines burning, demonstrated required range guidance and accuracy performance. Prototype production and development was speeded up and construction on U. S. *Atlas* bases accelerated.

Martin *TITAN* under development for SAC as backup for *Atlas,* is a 15,000 m.p.h. ICBM with a 5,500-nautical-mile range. Powered by two-stage liquid rocket engine, it will have radio-inertial and all-inertial guidance. Initial *Titan* launching sites will be in vicinity of Denver, Colo.

TITAN program, started year behind *Atlas,* entered testing phase with good results. Data acquired with *Thor* and *Atlas* and fed into *Titan* program, enabled more rapid, more economical development. When operational part of SAC, *Titan* will be launched from underground sites to afford protection against attack.

MINUTEMAN, second generation ICBM, to be lighter, smaller simpler than *Atlas* or *Titan.* A land-based solid propellant missile in 5,000-mile class, it will be easier to disperse because of nature of solid propellants.

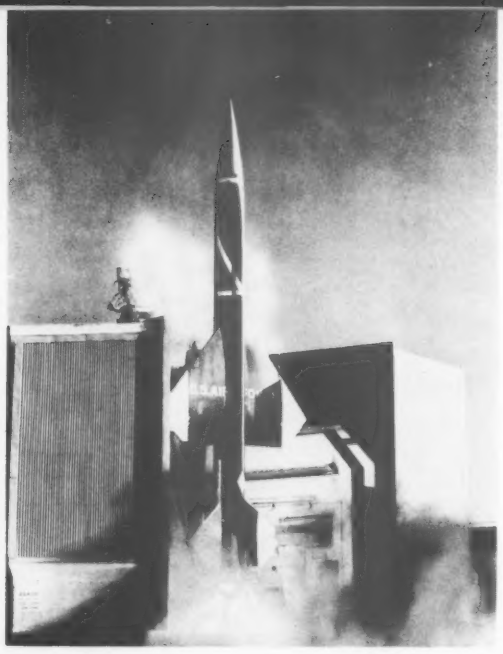
During the twelve-month period significant progress was made in another category of extremely important missiles — the air-to-surface field. *Hound Dog,* when developed, will provide B-52G *Stratoforts* with flexibility in tactics, will be launched from hundreds of miles outside heavily defended target areas. Employment of *Hound Dog* aboard B-52 will permit constant airborne patrol over the seas or friendly territory with capability to deliver an attack deep within an enemy country on a moment's notice.

Other significant '58 missile highlights ranged from readying SAC's first *Snark* unit to become operational at Presque Isle, Maine, in 1959 to setting up first *Bomarc* evaluation unit at Santa Rosa Island, Fla., and firing the *Falcon, Genie, Bullpup,* and *Sidewinder* at the World-Wide William Tell Weapons Meet.

Missile-wise 1958 was a year of dynamic evolution. No effort was spared in the development of a reliable family of Air Force missiles. The question of just how far we've come in missiles was answered by Secretary of the Air Force James H. Douglas. "I am confident that from the progress made in our missile programs," he said, "that we can build such missile force as may be required to maintain the deterrent without any gap between today's effective deterrent bomber force and tomorrow's effective force of missiles and bombers."

As we entered the year 1959 it began to look as if we could.

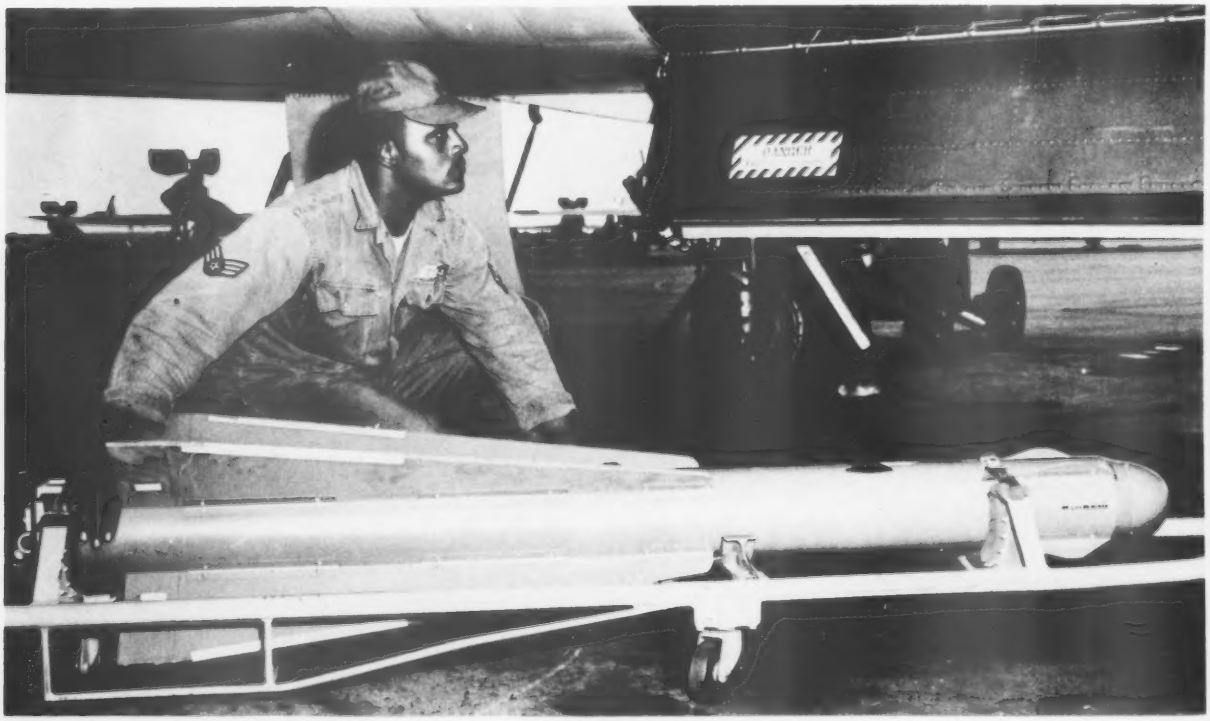
Douglas *Thor,* USAF IRBM capable of reaching more than 1,500 miles carrying a nuclear warhead, has undergone successful tests and is now in production. The single-stage weapon is powered by a liquid rocket engine. Guided by an all-inertial system, it can carry a nuclear warhead to an altitude of several hundred miles; provided main stage propulsion for USAF's *Pioneer* moon shot.



Boeing *Bomarc*, supersonic, rocket-launched ground-to-air area defense missile will permit Air Defense Command to destroy enemy aircraft far out from intended target. SAGE-controlled, its range of over 200 miles permits defense of large areas. Both single and multiple targets have been successfully intercepted by SAGE-*Bomarc* system.

Martin *Matador* surface-to-surface tactical missile is powered by Allison J33-A-37 turbojet and capable of 650 m.p.h. speeds. It is now in operational service with units stationed in Germany, Taiwan, and Korea. Martin *Mace*, (not shown) developed as successor to *Matador*, has improved guidance system and range of over 600 miles. First versions of *Mace* are planned for operational deployment soon.

Hughes (GAR-1, -2, -3, -4) *Falcon* guided rockets can be carried internally or under the wings of Air Defense Command's interceptors. Six-feet long, they have 20-inch span, 6.4-inch diameter, and weigh slightly over 100 lbs. Launched by the F-89H, F-89J, F-101B, and F-102, they are powered by solid propellant. GAR-1 and -3, are radar-guided; *Falcon* GAR-2 and -4 are heat-guided.

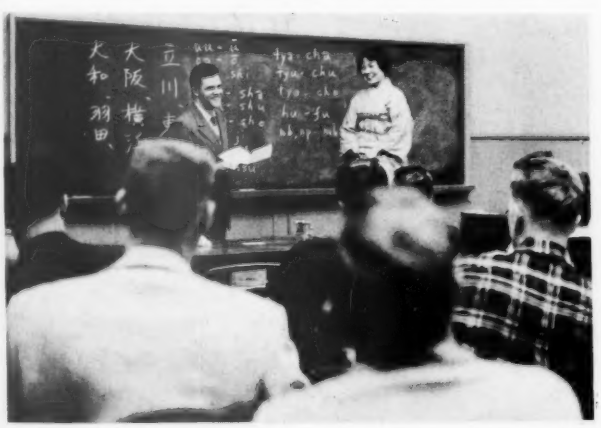


TRAINING THE MEN FOR TOMORROW'S AIR FORCE

The complexities of modern airpower require the voluntary service of the Nation's most promising individuals, prepared for service by initial and continuing training readily adaptable to the rapidly changing aspects of air warfare.

AIR FORCE DOCTRINE

Air Force Academy Cadets moved from temporary quarters at Lowry AFB, Colo., to spacious dormitories at their permanent campus near Colorado Springs, Colo. Dormitory rooms feature large plywood bookcases, aluminum frame study desks, ample closet space, and picture windows.



Foreign language training participation increased during the year. Many airmen attended full-time language courses offered by the Air University. Others, like this group in Japan, enrolled in off-duty courses.

Photo by M/Sgt. Norman Zeisloft

Three words—astronautics, missiles, and space—dominated the Air Force training program in 1958.

Air Training Command, headquartered at Randolph AFB, Tex., streamlined operations by assuming the functions of two subordinate headquarters, Technical Training Air Force and Flying Training Air Force.

A rapidly expanding missile program resulted in increased emphasis on missile training at Sheppard and Amarillo AFBs in Texas, Keesler AFB, Miss., Lowry AFB, Colo., and Chanute AFB, Ill. Strategic Air Command moved ahead in its *Snark, Jupiter, Atlas,* and *Thor* training activities, while Air Defense Command began work on a *Bomarc* area defense missile training site at Hurlburt Field, Fla.

Air Force weapon training ranged from ICBM instruction to small calibre personal weapons. A new small arms program announced in January had two main objectives: to qualify all active duty and ready Reserve personnel, except noncombatants, as "marksmen" and to assure that air police, aircrew members, base security personnel, and investigators qualify as "sharpshooters."

In the pilot training program North American's B-25 *Mitchell* bomber gave way to the Lockheed T-33 jet trainer as the standard aircraft for basic training instruction. The final B-25 class was nearing graduation at the year's end.

In March, at the School of Aviation Medicine, Randolph AFB, Tex., Dr. Hubertus Strughold, research advisor and lecturer on space medicine topics, was awarded the academic title of Professor of Space Medicine, becoming the first person in the world to hold that title.

A program was established at the Air Force Institute of Technology in April to train 30 officers per year in graduate astronautics, at Wright-Patterson AFB, Ohio, and at selected civilian institutions.

The Extension Course Institute, which provides correspondence instruction to active duty and Reserve officers and enlisted personnel and certain civilian employees, hit a new high in enrollment during the year, surpassing the 209,000 mark for the first time. At year's end more than 90 courses were available.

Plans were underway late in the year for establishment of an Officer Training School at Lackland AFB, Tex., which would provide an opportunity for a limited number of airmen with college degrees to achieve commissioned status.

TRAINING THE MEN FOR TOMORROW'S AIR FORCE

← Project All-Jet, designed to test the feasibility of giving cadets all their primary flight training in the twin-jet Cessna T-37, was launched late in the year at Bainbridge AFB, Ga.

→ Instructor and student discuss flying techniques following lesson in Beech T-34 primary trainer.

Photo by Beech Aircraft Co.

F-104 landing gear assembly serves as training aid at ATC's Chanute AFB, Ill. Technical courses were under constant revision in 1958 to keep them in step with technological advances.

Photo by A/3C Claudia Touchton

THE BIG "R" AND THE BIG "D"

In this dynamic age of increased international tension and dramatic scientific progress, the failure to recognize that times are *changing could be a fatal military error. In recent years the ever-increasing contributions of science and technology to the development of military weapon systems have profoundly altered traditional military concepts. It is a cold fact that the frontiers of military planning now lie in the application of science to the development of weapon systems.*

LT. GEN. JOHN K. GERHART
DCS/Plans & Programs, USAF

CONQUERING CLOUD COVER: Socked-in landing strips are on the way out. Top picture shows three parallel "tracks"—each six miles wide and two miles apart—opening in thick cloud "roof" at 5,300 feet over the mountain ringed Eureka airfield in Canada's Northwest Territories only eight minutes after an ARDC C-119 had seeded the area with 200 pounds of dry-ice pellets. Second photo, taken 16 minutes later, shows open "tracks" beginning to merge in one large hole which in less than a half hour expanded to almost 80 square miles in size, permitting a no-sweat contact approach and landing. The pellets transformed the cloud's water droplets into minute ice crystals which grew in size, became heavier and formed snow flakes, pushing the cloud layers groundward. This operational demonstration has been hailed as of tremendous potential value to aviation.

NINE years ago nothing like it existed. Then the responsibility for some of its current multiplicity of functions was widely scattered and loosely coordinated. Today on its genius in accomplishment of an intimidatingly intricate mission depends both the maintenance and enhancement of U. S. aeronautical superiority.

This, in brief, is the story of the Big "R" and the Big "D," the Air Research and Development Command. It is in business to discover new "know-why" on reactions, processes, and properties of physical nature, then to utilize the data to develop "know-how" which will enable this purely abstract basic knowledge to have useful application, be it for the most complex weapon systems or the equally intricate human system.

ARDC would astonish the great captains of conventional military history. First, foremost, and last it is an egghead outfit, yet a very hard-headed one. Its big stock in trade is brains, all kinds of brains. It enlists the intellects of scholarly theoreticians poring over reams of abstruse formulae on scientific problems.

It also commands the services of shrewdly practical brains that can see in highly theoretical papers the key to technological breakthroughs. So wide ranging is ARDC's curiosity that little seems alien to its purposes in the field of learning, whether it be mice, men, or missiles.

ARDC's multiple mission is spelled out thus:

First, to seek basic new knowledge. Through investigation of the fundamental laws of nature, through analysis, observation, and experimentation to extend and strengthen the foundation of basic knowledge upon which rests all technological advancement.

Second, to develop new and improved devices, processes, and techniques, specifically, guided missiles with built-in near-human intelligence, powerplants developing incredible thrust, aircraft capable of unprecedented supersonic speeds, atomic fuels, new armament and weapon systems, and increased efficiency in the utilization of natural and human resources to provide maximum efficiency at minimum cost.

Third, to maintain qualitative superiority of materiel by utilizing research laboratories, wind tunnels, testing facilities, and development and engineering centers to make possible aeronautical weapons which will fly higher, faster, and farther in fulfilling assigned missions.

The wellspring of dynamic progress toward ARDC's salient objectives is its basic research to discover so-called "pure" new knowledge. To promote results in this educational quest, ARDC is investing in the work of private, nonmilitary personnel at colleges, universities, and independent and industrial laboratories.

In the United States alone some 250 institutions of higher learning and nonprofit organizations are cooperating in the program.

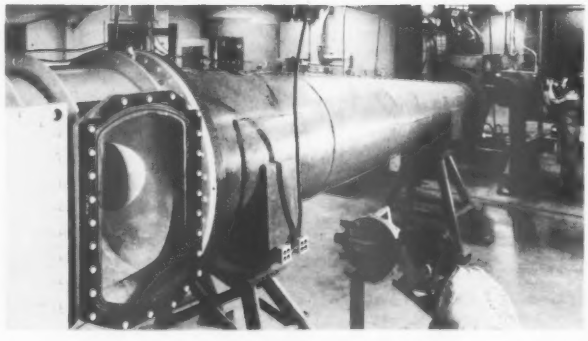
Physical scientists are financed under contract to pursue research in their various specialties—any findings to be at ARDC's disposal when results materialize. Obviously the newfound data are going ultimately to represent very substantial contributions to mankind's fund of basic scientific knowledge, thereby benefiting all peoples.

But scientific facts and lore know no narrow nationality and no one country can claim a monopoly on inquiring scientific minds. Mindful of this, ARDC for its program has diligently shopped the Free World for gifted brains and has them industriously at work in numerous countries from Eire to Israel.

ARDC's concept is at once farsighted and modern, yet with very ancient and sage foundation, for in Holy Writ we find this counsel: "A wise man is strong; yea, a man of knowledge increaseth strength." The advice is equally apt for a strong nation.

WITH THE GREATEST OF EASE: Floating through the air is 1st Lt. Melvin S. Gardner in the cabin of a C-131B. Furthering the study of physiological effects of weightlessness for the Aero Medical Laboratory at the Wright Air Development Center, the plane dives at 250 knots, pulling up at 2 to 2.5 Gs. Then, with the stick pushed slightly forward, Zero G or weightlessness is induced in the cabin as the parabola, or keplerian curve, is completed.

Millstone Hill Radar Site, located near Westford, Mass. Built and operated by the MIT Lincoln Laboratory, Lexington, Mass., the antenna measures 84 feet in diameter, is mounted on a tower 90 feet high and weighs 90 tons. It is used to track "moonprobe" vehicles.



ESCAPE VELOCITY MADE TO ORDER: In this Tunnel Hotshot II man for the first time has produced air flow with velocities duplicating the seven miles per second required for a probe to overcome the Earth's gravitational pull. This Arnold Engineering Development Center tunnel has even created velocities of 9 m.p.s., or about 32,400 m.p.h.

PROLOGUE SCENARIO FOR SPACE

With the arrival of the space age, we must also consider space vehicles. The Air Force has a definite interest in the space era; it is a natural extension of our normal area of operations. The Air Force of the future will, in fact, be a space force.

LT. GEN. ROSCOE C. WILSON
DCS/Development, USAF

OKAY, COLUMBUS? The *Thor-Able* space probe blasted off October 11, 1958, on historic mission which took it to an altitude of almost 80,000 miles by the following day to celebrate the 466th anniversary of the New World's discovery by Columbus. Although failing in its effort to orbit an instrumented payload around the Moon, this *Pioneer* penetrated astonishingly deeper into exterior space than any artificial device yet launched from the Earth. The present *Thor-Able* hardware, according to National Aeronautical and Space Administration experts, can deliver the velocities needed to put probes out toward both Mars and Venus, our nearest planetary neighbors. Compared with the 2.6 days required for a successful rendezvous flight to lunar environment, such a mission to Venus would take 151 days transit time, while Mars-bound the enroute interval would be 247 days. While the relative positions of Earth and Moon make conditions favorable for a launch three days monthly, the most auspicious lineup of the Earth and Venus occurs only once in 18 months, and it comes up again this year. With Mars the time lapse is over four years but conditions will favor a shot in 1960-61.

MAN'S first step toward space was the short, timid one of a babe. It measured a negligible 852 feet, negotiated in 59 fleeting seconds.

That began the era of powered flight at Kitty Hawk in 1903. Compare this with today's routine capability for global flight nonstop of conventionally powered aircraft or the maximum demonstrated reach of a rocket-driven space probe, then face up to the fact that both the X-15 and the existing hardware for future *Pioneer* shots stand on a par with the primitive flying contraption of the Wright brothers in their potentials for the dawning age of astronautics.

Very practically, this stern reality has influenced ARDC's methodical plans for utilizing the X-15 as a manned laboratory for investigating possibilities and problems which exist for the future military aircraft in contiguous "fringe" zones of space.

Similarly, the exploratory program mapped by the National Aeronautical and Space Administration is tailored to the pitifully unsophisticated calibre of vehicles and propellant and guidance systems currently available. This limits NASA-supervised projects to the equivalent of our cramped spatial backyard.

Such sober, unemotional assessment of likely developments in the months ahead for 1959 by no means deflates prospects of their highly dramatic potential or their promise of exciting, invaluable achievement. Just as Kitty Hawk over a half century ago can never be superseded as the immortal, most thrilling day in the chronicle of powered flight, so the coming months hold the promise of yielding equally stirring and historic events in the extension of man's physical and intellectual penetration of the challenging world which begins where our thinning atmospheric veil dwindles into the void of emptiness outside.

Both the ARDC and NASA programs are complementary. The first is designed to ready both man and his materiel for deeper forays into space. The second aims at developing more precise knowledge of phenomena he will encounter in more remote areas as well as to gain better insight into the performance and reliability of propellant and guidance systems. In this endeavor NASA will utilize the best scientific, technological, and professional talents available—both civilian and military.

To be specific, foreseeable activities for a long time are certain to be confined to the "infield" of the solar system, populated by our Moon and the two terrestrial planets, Venus and Mars. If that smallish yellow star, the Sun, is included the region accounts for less than a third of the entire solar system and occupies something under a 300-millionth part of our native galaxy, the Milky Way. That galaxy, in turn, is a relative small fry among the uncounted teeming thousands of similar "island universe" systems which people the yawning vaults of space out to fantastic mileages beyond the range of man's most powerful telescopic instruments.

Meanwhile, for a sane approach to the immediate future, it is well to keep in mind the wise observation made by the Rev. Dr. Francis J. Heyden, S.J., Director of Georgetown University's Observatory, who has done much celestial research under USAF auspices.

"Astronomy," declares Dr. Hayden, "can tell you two major truths now about the future of man in space. The first truth is that he is going there. The second is that he is not going far when he gets there."

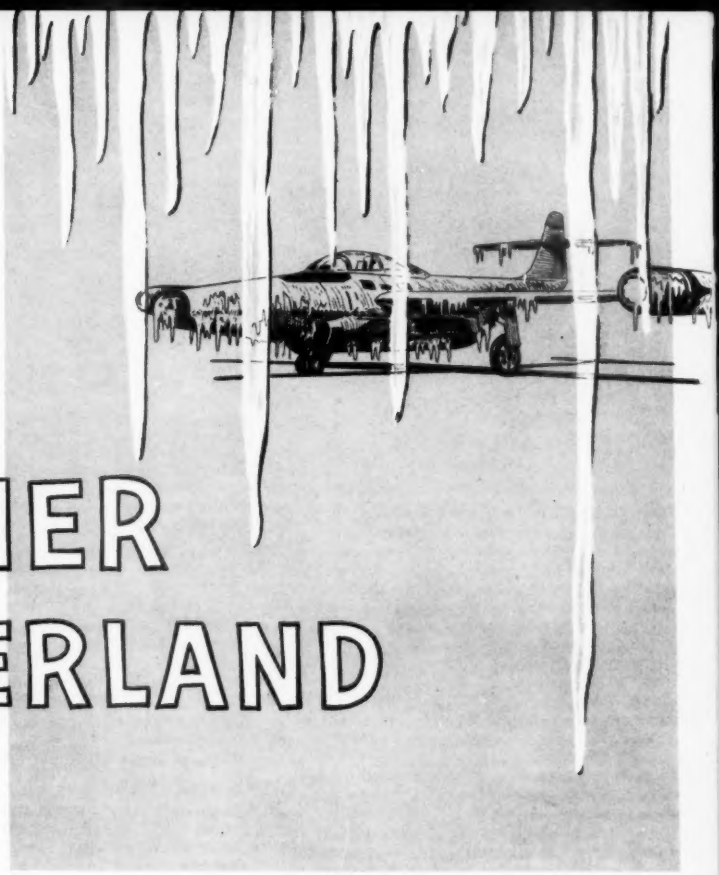
FIRST RECORD FOR X-15: Partially disassembled and swathed with wrappings like some ancient Egyptian mummy, the X-15 chalked up its initial speed mark here as it concluded probably the slowest trip of its career, passing down the AFTC Flight Line at Edwards AFB after being trucked from the North American Aviation Plant where it was built. Stripped of its shrouds, this research aircraft later emerged in its true dimensions with a 50-foot length and stubby, bent wings swept back at a 25-degree angle. On its programmed missions in coming months, the X-15 is expected to develop research information on temperature, and aircraft control in areas of hypersonic and extreme altitude flight. Other data to be sought includes exit, reentry, and zero G (weightlessness) phenomena as well as man's physiological and psychological reactions under these conditions.

ITO: The initials stand for Indefinite Theatre of Operations because astronomers are certain that for countless generations to come all manned space activities, whether exploratory investigations by science or military operations, will be within the Milky Way, our native galaxy. From what astronomy has learned of it, it has a disc- or wheel-like configuration like that of Andromeda, a slightly smaller island universe, which is the Milky Way's nearest neighbor among the billions of major galaxies populating the exterior universe. Andromeda's "nearness" is a matter of a mere nine quintillion (9 with 18 zeros) miles. Imagine a spacecraft capable of sustained velocities of 185,000 miles per second. Traveling at that rate, it would take a manned mission from Earth more than 15,000 years to emerge beyond the Milky Way's frontier.

© National Geographic-Palomar Observatory Sky Survey

PROLOGUE SCENARIO FOR SPACE

FOOD A LA TUBE: With the tube all the way through the faceplate and into his mouth, Air Force Capt. Leo N. Whitehair has only to squeeze the tube to feed himself. Captain Whitehair is one of four Aero Medical Laboratory subjects at Wright-Patterson Air Force Base, Ohio, who have been testing the new tube type of feeding for the high altitudes of space flight.



WEATHER WONDERLAND

by M/Sgt. Albert H. Swihart

Editor, THE EGLIN EAGLE

THROUGHOUT the night the temperature inside the big hangar had been 65 degrees below zero. A thoroughly cold-soaked F-89J *Scorpion* fighter-interceptor, the hangar's chief occupant, was heavily coated with ice and snow.

Outside the building lightly clad men sweltered and cursed the hot Florida air and took refuge from the burning sun in the shadows of Century Series fighters. A B-50 *Superfortress*, its tail pointed toward the area immediately in front of the hangar, stood ready to play its role in a unique test operation.

It was time for the *Scorpion* to emerge from the deep freeze. The 200-ton, heavily insulated, self-propelled door began to open. Icy air from the hangar's interior merged with high-temperature outdoor air and formed a dense cloud of fog. The B-50's engines roared into action and the powerful blast of wind from its propellers blew the cloud away. The *Scorpion* was towed to the "scramble" pit, armed, and flown off on a simulated combat mission within 30 minutes of its emergence from the deep freeze.

The hangar, located at Eglin AFB, Fla., is the climatic laboratory of Air Research and Development Command's Air Proving Ground Center. Its function is to test aircraft and equipment to determine their performance and effective life when subjected to extreme climatic conditions. In it every type of weather known to man, with the possible exception of tornadoes, can be duplicated.

Before this "deep freeze oven" was built, all climatic testing was done in natural locations. This was a costly procedure involving many problems, not the least of which was the uncertainty of the "natural" weather. Often Arctic tests were postponed because the duration of cold weather periods in Alaska was uncertain. In many cases temperature variations during Arctic tests rendered the data gained highly questionable.

When the otherwise efficient German air force could not get its planes airborne during sub-zero temperatures, during the winter of 1942 and 1943, it became obvious that a more positive means must be found to conduct cold weather tests for U. S. combat aircraft. In September 1943 the Army Air Force Proving Ground Command was given the task of creating a climatic laboratory.

Foul Weather Experts

Col. H. O. Russell, who had been administrative director of the Arctic-Desert-Tropic Information Center, and

APGC personnel prepare USAF's first supersonic bomber, the Convair B-58 *Hustler,* for extensive all-weather testing in Eglin's huge weather factory.

Lt. Col. A. C. McKinley, who had been associated with Army Air Force cold weather activities since 1941, were given the main responsibility for development of the new laboratory. McKinley, as a result of his experience with aircraft deliveries to Russia over the northern route and his contact with Russian pilots, suggested that all U. S. aircraft should be able to operate at 65 degrees below zero. In May of 1944 approval was given to build a hangar which could produce all extremes of climate.

Project Mule High

At that time Eglin had a small cold weather test facility, the armament stratochamber, used for testing guns and ammunition under simulated high altitude combat conditions. On one occasion tests were conducted to determine the feasibility of using oxygen masks on mules in order to permit aerial transportation of the animals over the Himalayas to China.

While armament stratochamber personnel tested armament and pack animals, engineers faced the tremendous problems involved in building a climatic hangar. No such project had ever been attempted. To cool nearly three million cubic feet of air to 65 degrees below zero would require giant refrigeration units, bigger than any ever before contemplated. Under the stress of war there was little time for research and less for testing, so much of the equipment was designed, built, and delivered to Eglin untested.

An ordinary kitchen refrigerator uses a one-sixth horsepower compressor charged with 10 or 12 ounces of coolant gas to cool 12 cubic feet of air space to 35 degrees above zero. The equipment delivered to Eglin would have to cool nearly a quarter million times that much air to a temperature 100 degrees colder. There were three main cooling units. Each had a 2,250 horsepower motor connected to a compressor. Each cooling unit was charged with 21 tons of coolant gas.

Insulation was a problem because most of the world's supply of cork came from Mediterranean countries and the Atlantic was infested with enemy submarines. The

engineers decided to use a new material, fibre glass, and the decision proved to be excellent.

World War II ended before the hangar was completed. In the months immediately following the war strikes in companies holding contracts for materials and supplies slowed the project. Finally, in 1947, the facility was completed, ready for its first test.

Real Cool Cat

No one knows how it happened, but somehow a skunk made his way into the building and found a hiding place before the hangar was sealed and the refrigeration units turned on. Although no one could locate his hiding place, his presence was strongly evident. The test went on as scheduled. When the thaw came several days later the little stinker walked complacently out of his hiding place and disappeared among the parked aircraft nearby.

On May 24, 1947, the first airplanes were rolled into the climatic hangar for testing. They included a B-29 *Superfortress,* a C-82 *Packet,* a P-80 *Shooting Star,* a P-51 *Mustang,* a P-47 *Thunderbolt,* and an R5D helicopter. In addition, trucks, tanks, clothing, and other items were moved into the main chamber to be put through the cold test. The original cost of the hangar, $7.5 million, was written off with the knowledge uncovered in that first test cycle. Since that test many hundreds of items of military equipment have been tested there, providing tremendous dollar gains to the Nation and greatly increased military effectiveness in all the services.

One of the most interesting tests ever conducted in the hangar took place in the engine test cell to determine the effect of shock during high altitude bailout. Test cell temperature was lowered to minus 65 degrees and dogs were taken from normal temperatures and placed in the room to face manmade winds of 70 to 100 miles per hour. In order to observe heart activity and blood pressure, each animal was instrumented. Immediately following the test with dogs, doctors and scientists subjected themselves to the same conditions.

Eglin airman shovels manmade snow during cold-weather testing of giant Douglas C-133A transport.

Some years ago a group of trainee flight surgeons, clad in normal flight clothing, entered the hangar's all-weather room to participate in a survival test. They carried food, shelters, Sterno can heaters, and other items of survival equipment. Inside was four feet of artificial snow, a 35 miles-per-hour wind, and a constant temperature of 65 degrees below zero. The doctors were to remain in the room for one week. From the test it was determined that it was impossible to keep the shelters in an erected position

Climatic testing of Russian-built MIG gave USAF greater knowledge of North Korea's combat capabilities.

and that the weather consumed the heat from the Sterno cans to the point that it was impossible to heat a can of beans. The test had to be discontinued after eight hours.

Eglin's climatic testing is not merely a matter of placing equipment under a given temperature and humidity situation and letting it stand for a period of time. The mammoth hangar was designed to permit engines and other equipment with moving parts to be operated during tests. There airplanes can do everything but fly, and one helicopter was even flown inside the building. During cold runs, guns on planes, tanks, half tracks, and fixed mounts can be fired through hangar wall ports. Bomb bay doors, bomb release mechanisms, gun turrets, cameras, and allied equipment can be tested in operation. Dummy bombs can be dropped into a bomb pit in the middle of the 50,000 - square - foot main chamber.

One Hundred Below Zero

An engine test room, designed to handle jet or reciprocating engines, can be refrigrated to minus 100 degrees for starting tests. Peformance runs can be made in this room in the minus 65 to plus 165 degree temperature range. Test personnel wear aircooled mechanics' suits during hot tests.

Arctic clothing is standard equipment for climactic personnel during cold-weather tests. This inspection is being conducted at minus 65 degrees Fahrenheit.

A cork-insulated, stainless steel-lined, all-weather room has a controlled temperature range from plus 165 to minus 80 degrees, a humidity range from 5 to 95 percent, variable wind velocities up to 35 miles per hour, and a device for producing rainfall in varying amounts from one-half to 15 inches per hour. By adjusting conditions to certain values, snow may be manufactured in varying amounts.

Weather in a desert test room can be varied either way from plus 60 degrees and 40 percent relative humidity to plus 120 degrees and 7 percent relative humidity in two hours, to simulate cycling of day and night desert conditions. A battery of sunlamps is used to approximate desert sunlight.

Eglin's *weather wonderland* also has a hot room, a cold room, a tropical marine test chamber, a salt spray chamber, and a jungle test room. Often several of these test chambers are used simultaneously.

At this writing the climatic hangar is well into its 12th year of operation. So far its safety record has been excellent, with no serious injuries to personnel or loss of life. In March 1958, however, two airmen and an Army technician sustained minor injuries when a pump on an alcohol trailer being used to fuel an Army *Redstone* missile exploded. The soldier received minor burns in the explosion and the airmen, members of Eglin's fire department, received first and second degree burns while fighting the fire. The missile and the hangar were not damaged.

Testing of an Army missile in the climatic hangar was not an unusual occurrence. The laboratory is the only one of its type in the world and the Air Force shares it with all the U. S. military services and those of friendly foreign nations. The knowledge gained in this unique facility will materially advance the future of aviation and the maintenance of our Nation's freedom.

Meet a Sportsman— M\Sgt. Woodrow W. Busby, USAF

by A/1C Thom Foulks
Keesler AFB, Miss.

"For the outstanding contributions made to the field of military recreation, M/Sgt. Woodrow W. Busby is nominated for the Armed Forces Special Citation Award.

"M/Sgt. Busby is one of the most highly respected men in his profession in the Air Force. A ballpark bears his name. Athletes from all over the world try to enlist at his base. Championship teams are a rule rather than a rarity under his tutelage. Sergeant Busby has won the esteem and appreciation of the personnel of each base to which he has been assigned."

Paragraphs 1 and 2 of letter, SUBJECT: Armed Forces Special Citation Award Nomination; TO: Commander in Chief, Strategic Air Command, Offutt AFB, Nebr.; FROM: Commander, 12th Air Division, March AFB, Calif., 4 April 1956.

EXTRACTED from official USAF correspondence, the preceding paragraphs epitomize the amazing career of one of the Air Force's greatest sportsmen, M/Sgt. Woodrow "Woody" W. Busby, newly assigned as NCOIC of Keesler AFB's Athletic Department.

During his 24 years in the service, Woody has won more base, regional, and command championships in baseball and boxing than he can remember. A partial list includes command baseball championships in the 2d AF, 8th AF, 15th AF, and SAC.

Although Sergeant Busby's career has centered around his activities as a baseball coach and manager, he's spent many years as a baseball player, amateur boxer, professional umpire, athletic director and organizer, and instructor of players' and umpires' clinics.

Also he's been a boxing promoter and trainer, promoter of civic recreation programs, promoter of youth movement in baseball, head of the worldwide All-Air Force Umpires' Association—plus spending a tenure as Commissioner of Baseball for the State of California while stationed at Castle Air Force Base.

Woody is a slim, erect, balding career man who intends to stay in the Air Force until 1964, when he completes 30 years. He puts it, "I've been here for quite a while—guess I'll probably stay a while longer."

"Taking charge" of the athletic program has been second nature to Woody since grammar school when he managed the baseball team for three years beginning in the fifth grade. By the time he was 14, he was managing his hometown men's team in Indian Springs, Alabama. At a still very young age he was conducting Little League player clinics.

Boxing took his fancy while still in school and before he left his teens, he twice wore the Alabama state welterweight championship belt.

In 1935, with one year in the service, Sergeant Busby performed the almost unbelievable feat of playing for and managing three teams at the same time—the Maxwell AFB baseball team, and a semi-pro baseball team, and a softball team, both of Montgomery, Ala. Several times playing three games in one day, he led one team—the softballers—to state championships four years in a row.

Ask him how he's found time to do everything, and he'll probably look at you as though he misunderstood your question. But dig a little deeper, and Woody will admit, "Well, it seems like I've put in an awful lot of 18-hour days. Can't help it, though—there's always one more thing to do."

After stays at Tyndall AFB, Fla., and Clark AFB, P. I., (producing championship teams at both bases) Woody

wound up in Japan coaching the Far East Air Force All-Stars in 1946.

With Gen. Douglas MacArthur's personal permission, Sergeant Busby began getting the Japanese back on their feet in their most beloved imported sport—baseball. He held player clinics and promoted games between the Japanese and the American occupation forces. His FEAF All-Stars of 1948, who lost only two games that season, were the first American team to play the Japanese.

1949 found the intrepid coach-manager-athletic spark plug at Smoky Hill (now Schilling) AFB, Kans., where he first assumed officially the title of "Athletic Director." The baseball team he formed at Smoky Hill could outdraw most colleges in the Nation for spectators. One night game in Wichita drew an overflowing crowd of 12,500. It was nothing unusual to see as many as 80 fan-filled automobiles following the team's bus to a game in the Kansas hinterlands.

He helped close Smoky Hill when his outfit moved to Barksdale AFB, La., where he began piling honor upon honor, and trophy upon trophy.

Barksdale also gave Sergeant Busby one of his biggest memories—the naming of a ballpark after him. An old "cow patch" that Woody and his organizing-managing abilities and a lot of elbow grease transformed, became (and is still) "Busby Field" in a surprise ceremony after a game with Maxwell (which Barksdale quite naturally won). The Louisiana base also saw Woody's last game as a player—he hung up his spikes after doubling in two runs in the ninth to win the 1952 season's windup game.

Traveling to California the following year, he landed first at Castle AFB, where he coached the baseball team to District Championships in 1954-55, trained the 1954 and '55 Pacific Coast Conference champ boxing team, took on the state's Baseball Commissioner duties, instructed a Little League and Babe Ruth League players' clinic, set up an umpires' association in '53, and expanded that organization to five counties.

He then went on to become president of the All-Air Force Umpires' Association the following year, set up an umpires' school for arbiters at all levels of competition, coached the 1954 PCC champion softball team, and helped manage the base tennis team to a 47 out of 49 season in 1954—besides serving as a Brooklyn Dodgers scout and manager of the semi-pro Atwater Packers in his off-duty time. Some of the players under him were Del Crandell, Jim Baxes, Jerry Coleman, J. W. Porter, Tommy Morgan, Bobby Brown, and Lloyd Merryman.

Next stop—March AFB, California.

At March, Woody reached another high in his Air Force career when he was awarded the Air Force Commendation Ribbon for his "distinguished . . . meritorious service during the period November 7, 1955, to December 1, 1956, as NCOIC, Athletic Department, 807th Air Base Group, March AFB, California," to again quote from official correspondence.

Sergeant Busby set up an intramural league basketball system that has since been adopted by many other Air Force bases, and also conducted the National Baseball Congress School for Umpires at March AFB. He saved the base approximately $1,000 by refinishing its gym floor with inexperienced help and limited materials.

Top. A great number of trophies have accumulated in the Busby household down through the years. Here, Woody looks at a few of them.

Bottom. Yankee star Jerry Coleman poses with Woody after a West Coast game when Jerry was playing with the semi-pro Atwater Packers which Sergeant Busby managed. Several present big-leaguers have grown under Woody's guiding hand.

And he still had time to lead the March AFB "Jets" to the AF Southern Division and California Semi-Pro baseball championships, before shipping out to Ramey AFB.

Nothing new happened at Ramey—that is, if you can call winning the USARCARIB baseball championship and setting up some of the best boxing smokers the Caribbean area has ever seen, "nothing new." After all, with Woody, it seems to be a habit.

AIRMAN'S WORLD

USAF firefighters now enjoy improved protection and crews are assured far quicker crash-rescue action as a result. Aluminum-coated, heat-protected outer shells have been adopted for addition to regular fire rescue suits. Use of the new suits permits rescue personnel to operate in heat situations which would previously have forced firefighters to remain on the perimeter of a crash scene until internal heat had lessened.

BASE OF CHOICE

Efforts are being made to improve the base of choice program for overseas returnees. A pilot study has been completed and results are presently being reviewed in USAF headquarters.

If results measure up to expectations, airmen may expect an increased chance of obtaining their base of choice assignment upon return to the ZI.

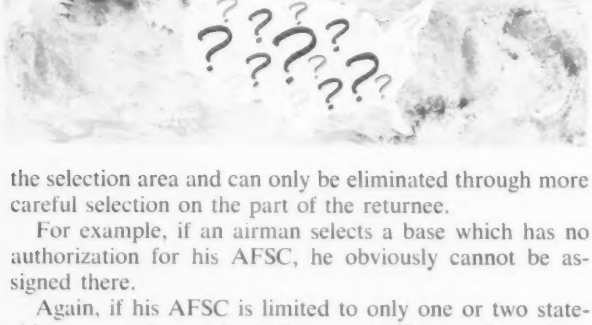
Primarily the system will remain unchanged. Returnees will continue to indicate a preference for first and second bases of choice, state of choice, and first and second areas of choice in that order. It will be after this information has been forwarded to headquarters that major changes will occur.

Under the present system, major commands are alerted solely on numbers of AFSCs which will be assigned to them from among overseas returnees. They then indicate to USAF headquarters where openings exist. These are then matched with airmen preferences at headquarters and assignments made accordingly.

Under the revised system, if adopted, preference cards would be forwarded directly to the commands, and assignments made by them. In this manner, the human element is introduced into the assignment procedure and individual desires will be afforded more personalized consideration.

Returnees from isolated duty stations will continue to receive priority consideration under the new system.

Some drawbacks are inevitable even under the proposed revisions; however, the majority of these will lie within



the selection area and can only be eliminated through more careful selection on the part of the returnee.

For example, if an airman selects a base which has no authorization for his AFSC, he obviously cannot be assigned there.

Again, if his AFSC is limited to only one or two stateside commands and he indicates a preference for a base under other command jurisdiction, he cannot expect to be assigned to his preferred base of choice.

Finally, selection of a base in an extremely popular geographical area limits the chances of obtaining the initial choice simply because of the multitude of requests which are received for such bases.

Under circumstances such as those outlined, preference cards are withheld from the machine-matching process until all others who have properly met the requirements have been selected. The remaining returnees are then given assignments wherever an opening for their AFSC exists. In reality, they eliminate themselves from competition for a specified assignment.

Airmen should make it their business to pay particular attention to matching their AFSCs with compatible bases, states, and areas before indicating their preferences.

ALL IN A DAY'S WORK

Writers have long been noted for extensive research before tackling a particularly hairy job of authorship, but the search for information got a bit out of hand recently at Edwards AFB, Calif.

Capt. James Wood, an experimental test pilot, has been conducting a series of deliberate runs into a standard USAF runway arresting barrier with Lockheed F-104 *Slashers* in an effort to establish pilot's handbook procedures for abortive take offs and landing overruns. One of his most recent efforts closely paralleled a rodeo's bucking bronc contest before it terminated.

The store of information had been enriched by more than 40 previous tests, all completed without incident, when Captain Wood was called upon to attempt an engaging run after first jettisoning the 1,600-pound pylon fuel tank during the course of his barrier approach.

Filled with water for the test, the tank was dropped and the arresting gear successfully engaged by both main struts. Then things began to go awry. The right main gear chafed the arresting cable forcing it down to the runway and under the right wheel. The aircraft veered violently to the left and skidded more than 900 feet down the runway before broadsiding into the dirt alongside the strip. As the right gear dug into the soft sand, the plane was flipped on its back, and Captain Wood was called upon to make an upside-down escape—unharmed—from the badly damaged fighter.

Although the fighter suffered extensive damage, it is being repaired and will be returned to inventory shortly. At the same time, virtually priceless information was added to the procedure handbook file thus assuring future F-104 pilots of safer operation under similar emergency conditions.

BAGGAGE RESTRICTIONS

Increased air travel has opened the way for possible misunderstanding of travel regulations and policies governing types of baggage and content which may be transported on military aircraft.

Among the most important restrictions are those pro-

hibiting shipment of pet animals, birds, or reptiles in either hand or checkable baggage wthout the specific authorization of the Chief of Staff, United States Air Force. AFM 75-1 is presently being revised to reemphasize these prohibitions. They are already MATS policy.

Additionally, in AFR 160-26, *Disease Prevention and Control,* which outlines quarantine regulations for vessels and aircraft, paragraph 17 is most explicit in import prohibitions against birds and animals as laid down by several additional government agencies including the Departments of Agriculture and Treasury, and the Public Health Service.

Similar restrictions exist in most other countries barring the import of such pets without specific authorization. In many cases, plants and plant products are also included in import and export restrictions.

MACH 3 MATERIALS

Two important developments for future aircraft construction were announced recently by separate research organizations.

The first, a new titanium alloy, which includes small percentages of aluminum, molybdenum, and vanadium, has been unveiled after a three-year search by Titanium Metals Corp.

Main features of the new alloy include reduced weight, capability of withstanding the extreme heat and stresses encountered at speeds in the order of Mach 3 (2,100 m.p.h.), and ability to resist pressures of more than 100 tons per square inch.

The second development, by the E. I. duPont de Nemours Co., aims at long-standing thermal insulation problems which may be partially resolved as the result of the discovery of new insulating material.

Composed of a compact mass of crystalline fibers, the new insulating material, dubbed fibrous potassium titanate, is formed into blocks to scatter incoming infrared rays. It will undergo further testing to determine the advantages which may accrue through use in rockets and missiles, space-age aircraft, and atomic-powered vehicles.

Fisherman's paradise? Ooooh, yes! Victoria Lake, recreational area for Ellsworth AFB, S. Dak., personnel, nestles among the Black Hills beneath towering pines. The 33-acre project was recently leased from the U. S. Forest Service with the stipulation it would revert to the Department of Interior when USAF no longer desired use of the area. Stocked annually with several hundred legal-sized trout, the site also offers volleyball, horseshoes, hiking, picnicking areas, and camping facilities.

BRITISH HONORS

Two of Britain's highest scholastic awards, the Olley Trophy of the College of Aeronautical Engineering and Oxford's coveted Bushell Prize, have been presented to members of the United States Air Force.

Lt. Daniel P. Levitt recently became the first non-British citizen to win the Bushell Prize, awarded annually to the outstanding undergraduate historian of the ancient British University's Corpus Christi College.

Now a historian at MacDill AFB, Fla., Lieutenant Levitt attended Oxford two years ago, after graduation from the University of Pittsburgh. The Bushell Prize was established in memory of an Oxford historian whose courage in battle earned him a Victoria Cross during World War I.

A 2C Adam Rudzki, an aircraft mechanic at McGuire AFB, N. J., was awarded the Olley Trophy, also presented annually, for the highest standard of practical ability in aeronautical engineering demonstrated by a student of the College of Aeronautical Engineering, London. Airman Rudzki was graduated, with honors, from the school in 1956.

Son of a Polish officer refugee, the 26-year-old airman, with his mother and brother, was smuggled out of Poland shortly after WW II and completed his schooling in England. He came to this country in 1956 and entered the Air Force the following February. His aeronautical engineering training enabled him to successfully complete a bypass test and accept award of a senior aircraft mechanic skill level.

Rudzki was flown to London to accept his award.

SNUG FIT

Technicians at Wright Air Development Center, Wright-Patterson AFB, Ohio, have concluded parallel studies on gloves and instrument panel construction with some interesting results.

Conclusions of the tests favor gloves which feature a snug fit thereby enabling the wearers to better operate the controls and push buttons of the modern aircraft. At the same time, it was also revealed that horizontal positioning of push buttons along instrument panels makes for more efficient operation.

The report has been published in pamphlet form and is being distributed through the Office of Technical Services, Department of Commerce.

CAT IN A HOT TIN PIPE

Supervising the maintenance and operation of a $4 million heating facility can be headaches enough without outside complications. When complications take the form of wild cats, you have far more than the number bargained for.

Such is the problem that faces A/1C Tony Calato, supervisor of the central heating system at Ramstein AB, Germany. Office buildings and on-base living quarters are supplied with steam heat and hot water from a central plant. More than a dozen miles of subterranean pipe are necessary to transport the heat to the numerous offices and homes.

Two German pipeline inspectors have the sole duty of creeping along the narrow tubes seeking out malfunctions and leaks. Their problem has been made doubly difficult lately by attack from a completely unexpected force. An estimated 100 cats, formerly of the household variety but long since gone wild, have selected the maze of pipes as a comfortable, warm, winter home, and they bitterly resent the intrusion of man. Not only have they valiantly defended their stronghold, but at times have actually taken the offensive against the intruders.

At last account, no successful counterattack has been launched by the confused custodians of the underground heating network. Patrons reported no reduction in normal heating supplies.

ALL-WEATHER LIGHTING

Extensive testing of supplemental flush lights for the already-accepted centerline approach lighting system is currently being conducted at SAC's Dow AFB, Maine.

Centerline approach lighting, in the installation stage at many USAF bases, employs high intensity light units, spaced at 100-foot intervals, beginning 200 feet from the end of the runway and extending to the 3,000-foot mark.

Each unit of the system features a brilliant, flashing strobeacon light, and the units are timed to flash in rapid sequence toward the runway threshold, that is, away from the landing aircraft. The impression afforded crewmen of a landing aircraft is that of a fireball racing down the strip ahead of the plane.

The flush lights being tested supplement the centerline system with rows of narrow gauge lights with flush open grids, even with and 30 feet on each side of the centerline installation. These lights will be installed in clusters of three with the first sets 100 feet nearer the approach end of the strip. The open grids, necessary to assure easy pilot vision, are constructed to withstand landing aircraft weights.

Initial, concentrated phases of the testing began last month. Random testing will be continued throughout the winter to evaluate the all-weather capabilities of the combined systems.

BITS OF BLUE

. . . Tinker AFB, Okla., representative of Air Materiel Command, was named 1958 winner of the annual USAF Fire Protection Competition. Second place went to Hickam AFB, Hawaii (PACAF) and third to England AFB, La. (TAC). A special Honorable Mention was presented to the 712th AC&W Squadron, St. Lawrence Island, for its outstanding program under austere, isolated, and peculiar location and mission conditions.

. . . Reenlistment figures for FY '58 showed a sharp upward trend over the previous 12-month period. First-term airmen reenlistments jumped from 29 to 38 percent. At the same time, USAF's overall reup figure rose from 44 to 53 percent for a corresponding period.

. . . Construction has started on Capehart housing projects at six more USAF bases within the past few weeks. The bases and programmed number of units at each are: Sioux City AFB, Iowa (235); Anderson AFB, Guam (1050); McClellan AFB, Calif. (540); Langley AFB, Va. (500); Clinton-Sherman AFB, Okla. (50); and K. I. Sawyer AFB, Mich. (235).

. . . Present planning calls for Ardmore AFB, Okla., to complete phasing out operations approximately the mid-

"Say, do you remember . . .?" seems to be the question as Gen. Earle E. Partridge, commander in chief, NORAD, and M/Sgt. Edwin Marsh discuss yesteryear during the recent USAF World-Wide Weapons Meet at Tyndall AFB, Fla. General Partridge was a captain and participant in the Mitchell Trophy Race at Selfridge AFB, Mich., in 1935 when Sergeant Marsh was a private first class mechanic. World speed records of that day hovered around the 200 m.p.h. level, hardly more than take-off speeds of many of today's firstline fighters.

dle of this month. The 463rd Troop Carrier Wing, first USAF operational unit to receive Lockheed C-130 transports, began moving to Sewart AFB, Tenn., in mid-November. If the present schedule is maintained, the base will be completely closed by April 1.

. . . Three-way cooperation was the keynote of a recent trans-Pacific crossing by 24 Marine FJ-4B *Furys*. Although stopping twice, at Midway and Guam, on their Hawaii to Japan flight, the fighters made the most of in-flight refueling during their three-day trip USAF KB-50 tankers supplied the vital fuel over Wake and USN AJ aerial tankers performed the mission over Iwo Jima.

. . . Brig. Gen. James Doolittle (USAF, Ret.) has been named Chairman of the Board of the Space Technology Laboratory, effective this month. STL has overall scientific responsibility for USAF's *Thor, Atlas, Titan,* and *Minuteman* programs.

PARACHUTE TESTING

Tests of parachutes at speeds of more than 3,000 m.p.h. and altitudes in excess of 26 miles have been scheduled by USAF's Air Research and Development Command.

Tests will be conducted at varying speeds and altitudes with a new rocket test missile, dubbed the *Cree*. Perfected by Wright Air Development Center, Wright-Patterson AFB, Ohio, the missile will enable engineers and scientists to study the performance of first-stage parachutes for manned aircraft escape, cockpit capsules, missiles, and drones.

Three parachutes can be tested simultaneously. The *Cree* features a cluster of three test missiles, mounted parallel, and propelled by a ground-to-air missile booster unit. Only the center missile is mounted directly on the booster. At a pre-set altitude, or by ground control, the two outside missiles are separated from the cluster, and all three then travel independently about 30 feet apart.

Timing mechanisms within each missile are set to eject the parachutes backward and to trigger cameras which begin recording the actions of the opened chutes. Thirty seconds later another series of timing mechanisms operate parachutes attached directly to the camera-bearing missiles, lowering them gently to earth, thus permitting photographic and recording equipment to be recovered undamaged for further study, evaluation, and re-use.

Tests are scheduled for three bases—low level and low speed work at El Centro, Calif.; medium altitude and speed at Holloman AFB, N. Mex.; and the maximum experimentation at Eglin AFB, Fla. The Eglin tests will be made over water.

JASDF PILOTS

Four Japanese Air Self-Defense Force pilots recently completed a tough six-month instructor's course in North American F-86D aircraft at Yokota AB, Japan.

Selected as the cream of the JASDF crop, the four Japanese officers trained as members of the 40th Fighter-Interceptor Squadron, flying regular missions two and three times daily at the sides of their American counterparts.

The school included intensive ground school and aircraft engineering training; instrument transition; night formation flying; acrobatics; radar transition; applied tactics; and rocket firing. Ground instruction included 62 hours in flight simulators and 120 hours English instruction, among the many other courses. Eventual goal will be assumption by JASDF units of present USAF aerial defense duties of the Japanese homeland.

Capt. Darrell Couch, assistant training officer, guided the students through the major portion of the course. Those completing training were Capt. Norio Seki, Maj. Shigeru Matsuo, Capt. Kenji Kariya, and Maj. Satoshi Nakamura.

YOU ASK IT

Q. Can you explain the relation between surplus military career fields and continued increased civilian hiring?

A. This is an extremely complex problem, with no easy or ready solution. Military surpluses are computed and handled at USAF headquarters with an eye toward USAF-wide solution. Civilian hiring is a separate entity and is usually done at the local level. Consequently, quite often when a local commander is faced with the problem of getting an assigned job done promptly, hiring of civilian personnel becomes the sole immediate solution. At the same time, however, every effort is made to avoid hiring civilian personnel in areas where military surpluses do exist.

Q. Is it possible to ascertain the degree of overage in a specific career field for use as a guide in determining whether to apply for voluntary retraining?

A. For various reasons, personnel officials will not disclose exact strength figures of career fields. However, they are usually most cooperative about indicating the percentage manning figures for a given field. For example, recent figures indicate that AFSC 70270 is presently manned to approximately 110 percent.

Q. Has the retraining program made inroads into surpluses which are large enough to suggest the possibility that some of these career fields may be removed from the surplus list?

A. This is a question that is virtually impossible to answer except with qualifications. Under ideal circumstances, many eventually may be removed. However, before this becomes possible many separate facets must dovetail perfectly. Retraining will have to continue at programmed speed; school quotas will have to remain high at noncom levels; strength figures will have to remain at present levels or above; and numerous other considerations will also have to be taken into account.

Q. Is it possible to take a training course at your own expense and qualify for reclassification without going to a formal USAF school?

A. Yes. Reclassification under these conditions is a local action upon proof of your proficiency. However, before undertaking any such action, it might be well to consult the personnel people at your station to ascertain,

for certain, if you are presently assigned to a surplus field and if your planned training will be directed at a shortage field.

Q. Even before I came into the service I was interested in the field of astronautics. I have made repeated efforts to obtain an assignment in this field, without result. Can you advise me of the proper action?

A. Many things would govern any retraining action. First, it is necessary you be eligible to retrain. Obviously, with constantly changing demands for skills, needs of the service must be placed before individual desires. If your present assignment is in a shortage field, the chances are you are not eligible to retrain. Secondly, aptitudes must be considered. Not everyone has the ability, for example, to learn a mechanical profession, yet they may be excellent in a clerical field. As for the field of astronautics, this is equally difficult to answer. Such a general grouping is virtually all-inclusive. Classification manuals indicate there is no assignment bearing this specific title; therefore, it might be wise to consult your personnel officer regarding a specific segment of the field.

AIR AGE LIBRARY

Professional

Services Around the World, edited by W. F. Craven and J. L. Cate, (University of Chicago Press, $8.50). The seventh and final volume of *The Army Air Forces in World War II* came off the presses late in October.

Like all of its predecessors, the final volume is massive, totaling 710 pages. It contains eight maps and 52 pages of excellent Air Force photos, concluding with the reorganization of the air arm in March 1946, preparatory to the establishment of a separate United States Air Force.

This volume concentrates its efforts from the point of view of the various organizations and services which were common to the whole of the Army Air Forces. Featured among them are the contributions of such organizations as Air Transport Command, aviation engineers, AAF Weather Service, Army Airways Communications System, AAF medical service, air-sea rescue service, and numerous additional programs which concerned wartime air operations.

Publication of the final volume of this invaluable history marks the climax of more than 12 years of research, compilation, writing, and editing. The result is probably the most complete history of aerial operations ever compiled in the annals of this Nation's military reporting.

A quick review of the first six volumes might serve as a reminder of the extent of coverage contained in the set.

Volume I is subtitled *Plans and Early Operations* (January 1939 to August 1942) and deals mainly with the air war which began at Pearl Harbor and Hickam Field. It is prefaced by a brief account of the period 1914 to 1939, the quarter century which followed establishment of the Aviation Section, Signal Corps, and a more detailed report of the pre-war preparations from 1939 to 1941.

Volumes II and III concentrate on aerial operations in the European Theater and are titled, *Europe: Torch to Pointblank* (August 1942 to December 1943) and *Europe: Argument to V-E Day* (January 1944 to May 1945). The first details air operations from the invasion of North Africa (Torch) to the final reorganization of the Combined Bomber Offensive. The second European volume opens with "Big Week" bombing operations and carries the air war to its final decision in Europe.

Volumes IV and V record the history of the AAF in the Pacific. The titles of these two works are *The Pacific: Guadalcanal to Saipan* (August 1942 to July 1944) and *The Pacific: Matterhorn to Nagasaki* (June 1944 to August 1945). The first narrative begins with the enemy's outward sweep at full flood and closes as MacArthur's forces prepare to return to the Philippines. The second details the collapse of Japan opening with the initial attacks against the enemy homeland.

The sixth volume, *Men and Planes,* describes the means by which men were recruited and trained and machines provided.

Critics generally agree that while the seven volumes will be most valued for the completeness of detail, the authors are also to be congratulated for their complete candor in reporting mistakes as well as the magnificence of aerial wartime achievement.

Each volume is available for $8.50, the entire set for $50.00, from The University of Chicago Press, 5750 Ellis Ave., Chicago, Ill.

More than 20 antique clocks grace the walls of the home of Maj. Cletis Bennett, demolition expert of the 7410th Explosive Ordnance Disposal Squadron, Wiesbaden AB, Germany. His hobby that started two years ago when Major Bennett purchased a 1790 German timepiece from a Wiesbaden clockmaker, has grown to where his collection now includes ancient clocks from Austria, France, and England. Prize of the group is a German masterpiece, reputed to be more than 300 years old, which was last repaired in 1848. All are overhauled upon purchase if necessary, and kept in perfect running order. The major spends approximately a half hour each Sunday morning winding and making minor adjustments to each of his chiming timepieces.

SLANTS ON SPACE

/// The Moon orbits closest to the Earth in the first month of this new year in the three-day period beginning January 9. In February the three-day span starts February 7. To reach the Moon when it is swinging through this perigee arc a lunar probe would have to be launched a little over 2½ days prior to the programmed time set for its entry into lunar environment.

At perigee the Moon is 221,463 miles from the Earth at the equator. However, the simplest parabolic trajectory a probe would have to travel to reach the Moon's vicinity would total in the order of 531,000 miles at minimum energy velocity. If the programming called for an elliptical trajectory, the mission would involve almost 685,000 miles.

/// Upcoming during 1959 are a partial eclipse of the Moon on March 24, and annular eclipse of the Sun on April 8, followed by a total solar eclipse on October 2.

/// Lightweights' Note: According to current calculations, it will cost the equivalent of $1,000 per pound by the prevailing 1959 purchasing power of the dollar to put the first men into space.

/ / /

/// There are more gaps in scientific data about Pluto than any other major planet in the solar system. Discovered only 29 years ago after its existence had been suspected for some time, Pluto is the outermost of known planets revolving about the Sun—at a mean distance of 3,675 million miles as compared with 93 million for our Earth. Although its equatorial diameter is something less than half the Earth's, astronomical calculations are that Pluto has almost the same mass as the Earth's, the ratio being 0.93 to 1.00. Among the major "unknowns" in data about Pluto are the following: surface gravity; escape velocity; density; number of days for a rotation on its axis; mean velocity in orbit, and the inclination of its equator to its orbital plane. For the single circuit of the Sun which the Earth makes in 365.256 days Pluto requires 248.43 years. Once astronomical observations become practicable outside the dense curtain of our atmosphere, the blanks in our knowledge about this remote member of our solar system should be speedily remedied.

/ / /

/// The velocities of artificial satellites in getting into orbit and also in circling our planet may be compared with the Earth's speed of 18.5 miles per second in revolving around the Sun. The average velocity of the Sun and the rest of the solar system with respect to the center of our native galaxy, the Milky Way, is 140 m.p.s.

/ / /

/// While most of the sizable bodies in the solar system have long owned names, astronomers never got around to agreeing on monikers for eight of Jupiter's even dozen moons, the largest number possessed by a major planet. They are designated by Roman numerals, ranging from V to XII. The first four are named for the Greek mythological characters, Io, Europa, Ganymede, and Callisto and also are sometimes identified by the Roman numerals I to IV respectively. Ganymede was a boy cupbearer to Zeus, the No. 1 Greek deity, and the other three names belong to dolls who figured at various times in the extremely amorous love life Zeus allegedly followed. The four moons are large and bright, having diameters of 2,300 to 3,200 miles. Ganymede and Callisto each are half as large as our Moon and Europa is only one tenth smaller. These four moons revolve about Jupiter in from 2 to 17 days. The other eight moons have diameters less than 100 miles and one very close to the planet revolves at more than 1,000 miles a minute.

/ / /

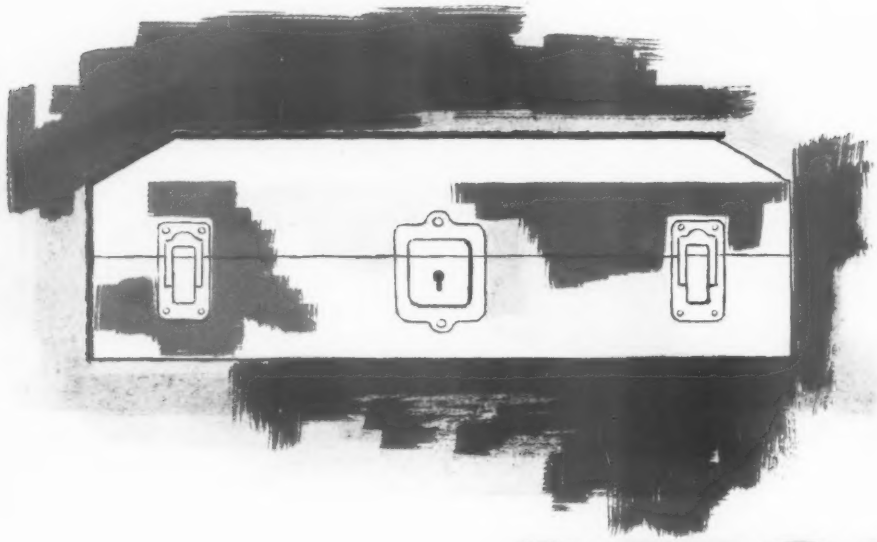
/// New doubts are growing in scientific circles that the existence of some primitive forms of vegetation on Mars accounts for the apparent changes in the coloration of dark areas on this planet. Some astronomers consider the possibility that the presence of lichens, moss and other simple forms of plant life would explain why these areas become darker during some parts of the year and then seem to grow lighter at others. As if to bolster this theory one Russian scientist has reported spectroscopic evidence of traces of some chlorophyll in these areas. Chlorophyll is the substance present when plants utilize sunlight to create carbohydrates in the process of photosynthesis.

Year-end evaluations last month, however, in a long-term seasonal research study of Mars are that the areas in question may prove to be lava fields. The study is being conducted at McDonald Observatory, Texas, by University of Chicago astronomers, using its 82-inch telescope, currently the world's third largest. Reports from the study team are that dark areas investigated showed scant seasonal change in intensity and appeared to be neutral lava grey instead of greenish colored.

/ / /

/// Some astronomers believe that the planet Saturn, which already is known to have nine moons, may be found to possess a tenth as space investigation progresses. The largest and brightest of these, Titan, is also the biggest natural satellite in the solar system, with a diameter of 3,500 miles as compared with 2,162 for our Moon or 3,100 miles for the planet Mercury. While the great distance of Saturn from the Earth—it averages almost 800 million miles—handicaps astronomical study, there is a theory that Titan, alone, of all the natural satellites in the solar system, is the only one possessing an appreciable atmosphere of its own.

—WILLIAM A. KINNEY



IF Y BEFORE . .

by M/Sgt. Paul J. Turner, *Airman Staff*

The widow of a 34-year-old Air Force staff sergeant who sustained fatal injuries in an automobile accident last April should be receiving nearly $250 each month to help her live and raise their two small children. She hasn't collected a nickel from either her survivors' benefits or social security. Why?

It was a terrible shock last spring when this young woman's husband and the father of their children met a violent death in an auto crash in California. Nothing could console the young widow for this untimely and tragic loss. But the day after his death the Air Force had already paid her his six-month death gratuity and back pay and allowances due him. This would help avoid financial distress during a critical period of readjustment. The family's trip to their desired home, shipment of household goods, and burial expenses were forthcoming immediately. The widow fully expected to receive monthly indemnity compensation and social security to help her raise the children, but when she applied for these benefits, certain documents had to be produced. She didn't have all the necessary papers to accompany claims to the Veterans' and Social Security Administration which handle these benefits. As a result she was unable to collect any monthly VA or Social Security benefits.

Three months later, while the airman's widow was still searching for the necessary documents, the Army Records Center received a letter. It was from another woman who had heard that the airman was killed and included her claim to be the sergeant's legal wife. Accompanying her claim was a copy of a 1947 marriage license and her statement certifying that to the best of her knowledge no divorce had ever been obtained by either party. The Army searched its records and finally sent the letter to the Air Force since they had no data on the ex-soldier.

Now his second wife must locate proof that her deceased airman husband was divorced from this first wife, and that such divorce was final before her marriage to him. Otherwise she cannot receive the monthly benefits.

Is this case unusual? Not in the least, nor is it unique. You might think first that the odds are slim for peacetime death of a man so young—true, but the chance is always there. On a base of 5,000 airmen the odds based on statistics reveal that some 15 will die in the next year—from auto accidents, sickness, misadventure, or other contributing causes. These deaths show no respect for age.

Complications similar to the above mentioned widow's case are found in hundreds of deaths each year. Widows search through bedroom closets, desk drawers, attic trunks,

YOU SHOULD DIE

• • • your metal box is in order, your survivors may suffer.

and tool boxes in frantic efforts to find copies of papers and documents that should have been stored in a fireproof metal box or safety deposit vault. The searches are frequently extended with letters of inquiry and request. Often weeks and months might even slip into years as survivors try to untangle legal snarls which prevent them from receiving indemnity compensation and social security payments.

It's Your Baby

Most airmen who die and leave problems for their loved ones to wrestle with, never intended it to be that way. In most cases it was neglect, or ignorance that put stumbling blocks in the path of the sorely needed survivors' income.

The Air Force maintains certain official records on every airman, basic to general, and requires individuals to review these periodically. USAF can't send someone into your home to inspect your metal box to see if your personal documents and papers are in order. Officials can only advise and remind you of what you should have, why, and how it should be kept.

The wife who constantly nags hubby to get copies of birth certificates, insurance papers, marriage and divorce certificates, etc. is not a hard-hearted woman bent on be-

coming a merry widow. She is merely trying to secure the assurance that when and if that inevitable day comes, she and your children will be provided for under existing laws.

Treasure Chest

Just what should be in that fireproof metal box or safety deposit vault? Let's take first things, first. The Air Force generally has sufficient evidence on which to base automatic payments of any pay and allowances due you and the six-month death gratuity. These are made on the basis of officers' semi-annual dependency certification, DD Form 93, or a commander's certification that (1) you established a spouse's right to BAQ (Class Q allotment), (2) you had a quarters assignment document (if in government quarters), or (3) in the event you and your wife are not living together, documents proving legal married status have been obtained.

Next comes your government insurance, if any. In applying to the VA for this, your beneficiaries will be required to submit a copy of their birth certificates.

Bear in mind that insurance is paid to the persons designated on the VA beneficiary forms. In a recent case, a tech sergeant died and left $3,000 in National Service Life Insurance. Some years ago he had named his parents to receive this money. He later married and on his personal affairs statement, obsolete Form 381, stated that his wife was the beneficiary of his insurance; she was the recipient of his six-month death gratuity and other benefits. However, the insurance policy's legal beneficiary form still said the money should go to the parents. Net result: even though the sergeant intended for his wife to receive the $3,000 it had to be paid to the parents who were legally named beneficiaries. Make sure that your box contains any VA insurance policies or certificates of policies, the current, witnessed copy of the VA Change or Designation of Beneficiary form, certified copies of any DD Form 234s establishing allotments for insurance payments, and copies of all correspondence pertinent to your Government insurance.

Supply When You Apply

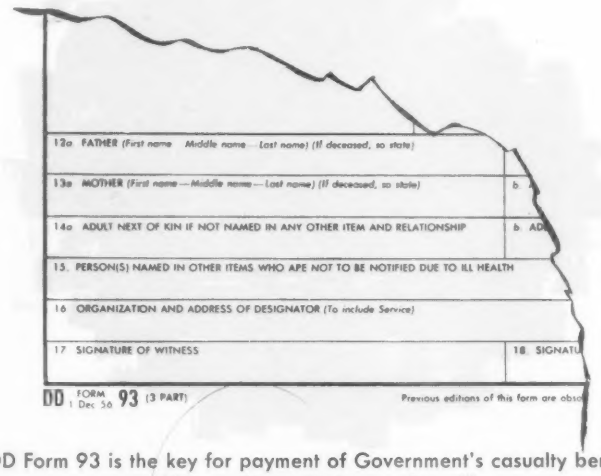
Survivors may apply for social security benefits from any of 600 Social Security Administration district offices or through the VA office handling their other claims. If children under 18 are survivors, the social security card of the deceased, a death certificate, and copies of the children's birth certificates (duly certified by the agency issuing the certificates, not photostats or copies) must accompany social security claim applications.

Once a surviving widow reaches 62 she must furnish proof of her age in order to receive social security payments in her own right. A copy of the marriage license is also needed.

Let's assume an airman has an adopted child but the birth certificate does not reflect the airman as the father. Naturally adoption papers must be furnished to reconcile the difference in names. By the same token a claim on behalf of a stepchild would be substantiated by the marriage license and the child's birth certificate. So in the metal box, depending on each individual case, you should have: your social security card, marriage license; certified copies of your children's birth certificates, copies of adoption papers or other documents needed to reconcile any difference in names, and a copy of your wife's birth certificate.

Facts Are Required

Your widow, children under 18, or parents apply to the Veterans' Administration for indemnity compensation


12a FATHER (First name Middle name Last name) (If deceased, so state)
13a MOTHER (First name — Middle name — Last name) (If deceased, so state)
14a ADULT NEXT OF KIN IF NOT NAMED IN ANY OTHER ITEM AND RELATIONSHIP
15. PERSON(S) NAMED IN OTHER ITEMS WHO ARE NOT TO BE NOTIFIED DUE TO ILL HEALTH
16 ORGANIZATION AND ADDRESS OF DESIGNATOR (To include Service)
17 SIGNATURE OF WITNESS
DD FORM 93 (3 PART)

This DD Form 93 is the key for payment of Government's casualty benefits even if it conflicts with terms of a will.

payments. These are the monthly payments established under survivors' benefits legislation. In the case of a widow the marriage must be confirmed and, naturally, must be legal. One of the most frequent bottlenecks in processing such claims comes from this requirement. If your marriage is the first for you and your wife, all that's needed is the marriage license. If you have been married before, a copy of the final divorce decree must be submitted and this must have been issued by a court before the date of your marriage to your existing widow. Similarly, if your wife has been previously married, a copy of her *final* divorce decree (issued before your marriage) must also be supplied. As mentioned earlier, to have less is an open invitation to both delayed processing of claims, possible nonpayment to your survivors, and even the chance of investigation for fraudulent acceptance of allotment monies, etc.

Any airman who has a problem in this respect—that is cannot reconcile his past, and existing marriages or those of his wife—should immediately seek counsel from his base legal office.

As in the case of social security, the birth certificates of children must be furnished and, in the case of adopted or stepchildren, documents to reconcile names and status of

TREASURE CHEST

Every airman's metal box should contain the following as applicable:

Copies of airman's birth certificate (certified by issuing agency).

Copies of wife's birth certificate (certified by issuing agency).

Copies of each child's birth certificate (certified by issuing agency).

Copies of record of marriage or marriages.

Copies of final adoption decrees.

Copies of final divorces (for airman and/or wife).

Copies of any marriage annulments (for airman and/or wife).

Copy of will or data on where it is stored.

Copy of power of attorney or information on where it is stored.

Insurance policies (both Government and/or commercial for all members of family).

Bank books.

Savings bonds or other securities.

Social Security card or record of number and location of card.

Copies of insurance beneficiary designation forms (VA and other).

Copies of naturalization papers or complete data on citizenship proceedings.

Copy of USCOA selection (AF Form 806).

Copies of federal and any state tax records (withholding slips, etc.).

Mortgages on house or property.

Car titles and record of other owned items such as jewelry, boat, livestock, etc.

Record of any prior service numbers.

Record of any prior Veterans' Administration Claim numbers.

Copies of discharges and/or reports of separation.

Location of any safety deposit box and key.

IF YOU SHOULD HAVE ANY OF THE ABOVE AND DON'T HAVE THEM SAFELY STORED IN A FIREPROOF DEPOSITORY YOU'RE DEBASING THE TREASURE CHEST WHICH YOU LEAVE SURVIVORS IF YOU DIE.

children must be supplied. At this point you must either have in your "kitty" or add to it: marriage and divorce papers, birth certificates, and adoption or allied papers.

One or Many?

It would be well to mention that one copy of a widow's and each child's birth certificate, as well as adoption and allied documents, and marriage and divorce papers, are sufficient to be filed with the Veterans' Administration central office in Washington, D. C. Regional VA offices refer to it for authentication of survivors' status. The Social Security Administration may be notified by means of a combined form arrangement. However, many airmen prefer to keep at least two copies of these important papers to guard against possible loss or other delays.

A will is something that many airmen make, others do not, depending on the amount of property owned and other circumstances. In all cases there are reasons why a will should be made. Both parents may be killed and a will becomes an important document in the disposal of property, custody of children, etc. In many states common property laws might not protect your desired recipient of your estate. In each individual case your base legal office can advise you on the pros and cons of a will. If a will is made, a copy of it should be kept in the metal box, or at least a note explaining where the will is stored. The Air Force maintains a depository to which wills may be sent for safe-keeping. Details on how to go about sending your will to Hq, USAF are contained in Air Force Pamphlet 34-1-8. Caution should be exercised in making a will, in that if the will conflicts with your Form 93, *Record of Emergency Data,* insofar as military or Government payments or benefits are concerned, it has no effect. The stipulations made on this form are the only legal basis for payment of Government monies and benefits. (See page 38, THE AIRMAN, Oct. 1958.)

In this respect it is important that airmen not only review this extremely important form during their annual records check but have the form changed or a new one executed each time the status of dependents changes, their address changes (even if you only move your family across town), or you feel that there may be some error in the designations.

As in the instance of a will, individual circumstances vary with regard to the need for executing a power of attorney. This type document is used when you desire to give someone else the right to act for you in legal and property matters. An airman going overseas and leaving his family and/or property in the United States might want to make such a designation. Types of power that

can be given are numerous and methods of terminating them vary. It's good advice to have the counsel of your legal office when preparing a power of attorney or in cancelling or changing existing documents of this character.

Various and Sundry

If your metal box is large enough, and it should be, you'll want to keep copies of many other important papers in it. To mention a few: your discharge papers; citizenship papers (if naturalized); federal, state, and local tax records; bonds; mortgages and deeds; car titles or titles to other property like boats, jewelry, machinery, etc.; car insurance; bankbooks; USCOA Form 806; and a copy of executed power of attorney

Metal Box vs. Deposit Vault

Once you've obtained all the documents you need, you must consider the safest place and method of storing them. Mom's sewing box, an empty metal candy box, or similar items just won't do.

Many insurance and other companies give away courtesy burn-proof containers. Other types of boxes can be purchased from surplus stores, office supply houses, banks, or safe companies. Use caution with any of these because a burn-proof box is not necessarily fire-proof. A laboratory seal showing the time that such a container can remain in a fire and keep the contents safe should be checked. If no laboratory tests have been made it's a risk. Home or wall safes can be purchased for as little as $40 to $50. These too have limited fire protection.

Another point to remember is that any home storage device should be (1) concealed and (2) securely fastened to something in your home. A burglar, not realizing that such a container had in it only papers of value to you, might walk off with the container and throw it away once he opened it and found nothing of value to him.

Probably the safest method of storing all your valuable documents is that provided by banks—safety deposit vaults. These can be rented for a very nominal fee, from $4 to $6 a year for a size suitable for most airman's needs. It's a good idea though to rent such vaults in the wife's name. If the vault is jointly listed or in the airman's name and he dies or is killed, a court order is normally issued immediately sealing the vault until certain legal steps are taken.

Help Available

An airman shouldn't feel that if he dies his wife is left with a metal box which she carries from office to office collecting red tape ribbons. Every Air Force installation maintains a casualty assistance office or officer. It is the intent of these agencies to help your survivors by explaining benefits available and assisting in processing the required claims. However, no one but you can put your metal box in such good order that your survivors will be properly prepared to have their claims for benefits expeditiously handled and unchallenged.

Col. Harry R. Burrell, Commander of the 4050th Air Refueling Wing at Westover AFB, Mass., summed it up recently when he said ". . . Remember, should tragedy strike—your worries are over, your wife's are only beginning. Don't gamble with your family's future."

TIPS FOR SAFE WINTER DRIVING

Pilots use a cold-weather checklist for safe winter flying. Here's a winter-safety checklist for the more than 800,000 members of the Air Force who are licensed to drive.

1. Accept Your Responsibility.

Do all in your power to drive without accident. Winterize your car, yourself, and your driving. Don't blame the weatherman for an accident—you are the only one who can avoid getting yourself into trouble.

2. Use Good Tires and Tire Chains.

Whether you use regular tires or snow tires, be sure the tread is in good condition and not worn smooth. Use reinforced tire chains on snow and ice, since they cut stopping distances about half and give four to seven times more traction than tires without chains. But, even with the help of the best snow tires or tire chains, slower than normal speeds are a must on snow and ice.

3. Keep Your Windshield and Windows Clear.

Clean all the snow and ice off your windshield and all other windows of your car. Be sure your windshield wiper blades are in good condition and don't streak. Wipe off the inside of all your windows and make sure your heater and defroster are working properly. You have to see danger to avoid it. Don't forget, danger may approach from the sides or rear as well as from the front.

4. Get The "Feel" Of The Road.

Try your brakes occasionally while driving slowly and away from traffic. Find out just how slippery the road is and adjust your speed to road and weather conditions. Remember, you can't stop on an icy dime.

5. Follow At A Safe Distance.

Keep well back of the vehicle ahead—give yourself plenty of room to stop. Remember, it takes three to 12 times as far to stop on snow and ice as on dry pavement. It's hard to explain why you couldn't stop when the other fellow did.

6. Pump Your Brakes.

On snow and ice, the best technique for stopping quickly and with full control of your car is a fast up-and-down pumping of your brakes. Jamming and "freezing" on your brakes is almost certain to lock your wheels, and this is apt to throw your car into an uncontrollable and dangerous skid.

In the Name of Congress

For displaying heroic courage and skill as a navigator, at the risk of life, by his nonstop flight in his airplane, the Spirit of St. Louis, from New York to Paris, France, 20-21 May 1927, by which Captain Lindbergh not only achieved the greatest individual triumph of any American but demonstrated that travel across the ocean by aircraft was possible.

PROLOGUE TO FAME

by M/Sgt. Hal Bamford

Charles Augustus Lindbergh, Captain, United States Air Service Reserve, was the fourth man directly affiliated with this Nation's air arm to be awarded the Medal of Honor, the fifth to win it through aerial accomplishment.

Unlike his predecessors, Lindbergh boasted an extensive flying background prior to the cited deed. However, also unlike his predecessors, he faced no enemy other than the elements.

Less than a quarter century of flying history had been inscribed when "Lucky Lindy" startled the world with his famed solo flight across the Atlantic Ocean. The story, now more than 30 years old, is still too well known to necessitate retelling here. The years that preceded that feat are not so well known.

Charles Lindbergh was no newcomer to aviation in 1927. His name was already associated with startling aerial accomplishments long before it was inscribed, for all time, in the annals of the air. Grandson of an immigrant Norwegian farmer who settled in Minnesota, he quit the University of Wisconsin in 1921, when only 19 years old, to heed the call to adventure. From the campus in Madison, Lindbergh went to flying school operating in Lincoln, Nebr. Because he could not raise the $500 bond required before students were allowed to solo, he never graduated.

He had learned the fundamentals, however, and failure to graduate was not to deter

him. Lindbergh struck out in the toughest finishing school available to aviators of the 20s—the barnstorming circuit. He flew anything he could lay his gifted hands on, and when he could not obtain an aircraft, he contented himself with the exhibition parachute jumping.

Judiciously he saved every possible dollar and, by March 1923, accumulated enough money to purchase a Curtiss *Jenny* at an Army salvage sale in Americus, Ga. With it, the handsome youngster followed the exhibition trail until October when he carried another exhibition jumper aloft at an air show in St. Louis, Mo. The results of that flight were to lead him to the greatest adventure of his life.

The jump was near perfect but, on landing, the unidentified daredevil fractured an arm. Lindbergh was so upset at the misfortune he sold his plane and took a job to help his contemporary regain his health. There he remained all winter and, when spring returned, enrolled as a cadet in the Air Service primary flying school at Brooks Field, Tex. His progress was rapid and marked by his ability at the controls. On March 15, 1925, exactly one year after entry, he was graduated from the pursuit school at Kelly Field and commissioned a second lieutenant in the Air Service Reserve.

However, before he obtained his wings and bars, his parachute experience was to stand him in good stead. Nine days before graduation Lindbergh was involved in a mid-air collision and forced to leap to save his life, the first of four such Caterpillar Club efforts.

During the winter of 1923-24, he made many friends in St. Louis. Consequently, upon graduation, Lindbergh asked for and received assignment to the 35th Division Air Corps, 110th Observation Squadron, Missouri National Guard, based in that city.

There he found work with the Robertson Aircraft Corp. and settled into a regular routine. Within a year, however, regular hours began to pall and, when bids were asked for airmail routes, the Robertson Corp. was in the forefront. Lindbergh was selected to survey a St. Louis to Chicago route and, after the company obtained the contract, he made the inaugural run on April 15, 1926.

His exploits as an airmail pilot spread his fame throughout the Midwest. Consequently, when he finally decided to seek the $25,000 prize offered for the Paris flight, Lindbergh was not an unknown. However, his youth—for despite his vast flying experience he was only 25—worked against him. Repeated efforts to find a sponsor went unrewarded until finally his friends in St. Louis came to his aid. Mr. Robertson added $1,000 to Lindbergh's own $2,000, and Harry Knight and Harold Bixby, members of the St. Louis Flying Club, underwrote a note for an additional $15,000 to finance the aircraft and set the stage for the final act.

Passing years have failed to dim the luster of the 33½ hours which brought lasting fame to this Minnesota farm boy. In December 1927, a special act of Congress added his name to the Medal of Honor roll. Lindbergh bears the distinction of being one of only two men so honored between wars. Today his tiny Ryan monoplane hangs majestically in the Smithsonian Institution. His affiliation with the Air Force Reserve continues, now as Brig. Gen. Charles A. Lindbergh.

THE LEAP TO LIVE

Four times Lindbergh leaped from aircraft to save his life, all within a space of less than two years. Although not the first to "hit the silk" to avoid death, he was recognized until 1940 as the man who had used this method of escape most often.

As noted above, Lindbergh's first brush with death occurred just prior to completion of his Air Service flight training, March 6, 1925.

His next adventure with the handiwork of the silkworm was on June 2, 1925. Engaged in flight testing a privately constructed aircraft near Lambert Field, St. Louis, he suddenly felt the plane, at an altitude of about 2,000 feet, slip into a lefthand spin. Despite his best efforts, he could not recover and was forced to bail out. The leap was accomplished at less than 300 feet and, aside from a bruised shoulder, he suffered no ill effects.

Jumps three and four both resulted from adverse weather conditions. In September 1926, on an airmail run from St. Louis to Chicago, Lindbergh was forced to jump near Ottawa, Ill., when his aircraft ran out of fuel while he searched for a hole in pea-soup fog. Less than two months later, on November 3, he bailed out near Bloomington, Ill., again on the St. Louis to Chicago run, when a blinding snowstorm resulted in almost identical circumstances.

The four leaps qualified Lindbergh unquestioningly as a member of the famed Caterpillar Club. Like most flying fraternities, the club was founded to fit the circumstances. In 1922, Leslie Irvin, president of the Irvin Air Chute Co., pledged himself to donate a gold pin to any flyer whose life was saved by one of his company's products.

Shortly thereafter, the Air Service nominated its first member. The pioneer was Lt. H. R. Harris who successfully went over the side on October 20, 1922. Not only did the leap qualify him as the first Caterpillar Club member, but also as the first member of the now-famed organization. Harris is alive today to tell of his harrowing experience. He retired from active duty on December 31, 1955 as Brig. Gen. Harold R. Harris, United States Air Force.

by
Brig. Gen. C. H. Pottenger
Commander,
315th Air Division, PACAF

Quality Air Force

For some years now, the word retention has keynoted much of our effort to improve our unit effectiveness. The root of many of our present problems has been clearly traced to the high rate at which qualified personnel have left the service to avail themselves of opportunities in the "greener pastures" of civilian life. One of the most professed reasons, tipping the scale of choice toward a career in civilian life, has beeen that of inadequate pay for the military.

Congress has now taken action to relieve this inequity and therefore has every right to expect a greater return on the investment they have made for our country and our people. It is not correct to assume that higher pay will solve all our problems, but it is expected to make an Air Force career attractive to a far greater number of people who are qualified to meet the demands of commanding, managing, and operating our modern complex and costly equipment.

Obviously the effort and interest which go into selection and retention of the best people from among those available to fulfill our requirements have a great bearing on our effectiveness and efficiency as a military force. The task which now confronts commanders and supervisors at every level of command from the Pentagon to the squadron is to incorporate this new management tool into the officer retention program. The objective is to attain an officer corps of outstanding quality.

Even though our present quality standards are relatively high, this wider range of selectivity makes it appropriate that we raise our sights even higher to meet the objective of retaining career officers who are capable of leadership and management of the highest order. The objective of higher quality extends further than the acceptance of new officers into the corps; it must apply to all officers if we are to reach maximum effectiveness in everything that we do. Marginal producers, those who fail to maintain the necessary standards of character and integrity, and those who cannot maintain a pace commensurate with the grade and skill level established by their peers must be weeded out. Officers whose services are recognized as truly outstanding must be placed in positions of greater responsibility so that unit efficiency will increase.

Since most of the tools available to pursue a weeding-out process which will clearly identify both outstanding and marginal officers are largely dependent on effectiveness reporting, it is necessary that all commanders and supervisors henceforth demand a higher standard of performance and evaluate each officer accordingly. This will require a high sense of responsibility among rating officers, for they must be impersonal and have the courage to be specific, factual, and thorough in identifying the marginal officer as well as the outstanding one. Once we have the effectiveness reporting system geared to the new standards, the other means available for controlling the quality of the officer corps, e.g., promotion, demotion, deferral, and elimination, will then have more use as management tools to accomplish our objective.

The other aspects of the Officer Retention Program should not be forgotten nor should they now be relegated to a minor role. Surveys conducted by personnel consultants to industry have repeatedly indicated that the most important aspects of job satisfaction are these . . . and in this order: 1. A feeling of belonging. 2. Individual rights and dignity. 3. Good bosses.

Naturally these apply to the Air Force job as well as the job with industry. By satisfying these essential individual needs, both the Air Force retention rate and unit effectiveness are enhanced. These factors may be termed the "psychic income" which a person expects to be paid for his services. Our budget for this type of remuneration is unlimited and we should invest heavily in this field.

A newly assigned officer must be welcomed into the organization in a friendly and business-like manner. As part of his initial indoctrination he must be "mission oriented." It takes a very careful and planned effort to acquaint each officer, regardless of grade, with the part he plays in contributing to the mission of his unit, and how his unit fits into the mission of the command and overall theater operations. Each member of the team is important but unless he is made to feel this, he won't contribute his best and much of his drive will be absorbed in his effort to "work" his way into the organization. This is important to him. Keep him informed, for knowledge is the basis of attitude, inner disposition, and intention.

Each man must be treated as an individual. Many of the attributes of leadership can be satisfied by knowing the men who work for you. If a commander is successful in identifying the individual efforts of his men with the success of his unit and promotes such efforts in a way that imparts dignity to the job and stature to the individual, he develops esprit which radiates combat effectiveness. Having attained stature, the officer is in a position to discharge the special trust and confidence placed in him.

The officer procurement system has in the past provided—and will continue to provide—many men with the basic qualifications and the necessary potential to meet Air Force officer requirements. Nearly every important piece of career incentive legislation placed before the Congress has received favorable consideration. If each commander will take a personal interest in the quality retention program and set the pace by applying higher rating standards, we can meet the third criterion of job satisfaction—good bosses.

The new management tools given us by favorable career legislation should not serve to decrease our local retention efforts, instead they should inspire us to increase them, with emphasis on quality. It must be remembered that the ingredients essential to officer retention, including quality control, are the same ingredients that are necessary for combat effectiveness.

by William A. Kinney
Airman Staff

Ever happen to think of G-stresses when you slide with easy relaxation behind the wheel of your car? Probably not. Well, brother, maybe it's about time you started, and it makes no difference whether you belong to a flight crew or are on ground duty, because those Gs are the killers and the maimers in every serious auto accident.

Should the family chariot hit a solid object like a wall at 35 m.p.h., motor safety studies show, the body of the driver or a passenger is suddenly subjected to a force 100 times its weight, or 100 Gs. This is 10 times the G stress produced in "routine" violent deceleration with rocket sleds at Holloman AFB and compares with the estimated 15 Gs upon reentry from orbital flight which is no small concern for space medicine.

Research has established that even a 10-G crash is likely to be extremely dangerous for all occupants of a motor vehicle. It also has developed hard proof that where a car is equipped with seat belts the risk of death or grave injuries in a nasty smash-up is drastically cut.

There is one astounding case on record of an expectant mother who providentially wore a lap seat belt in a bad wreck which subjected her to a 60-G stress. She survived without the slightest internal injury either to herself or to her unborn baby. In another high-speed auto accident involving a 75-G stress a man escaped without internal injuries although his belt broke.

It is estimated that if all cars in the country were equipped with seat belts accident casualties would be cut anywhere from 50 to 66⅔ percent. A study by the Ford Motor Company has led to the conclusion that seat belts would halve the present accident death toll which has been running over 35,000 annually. The number of serious injuries would be slashed from almost a million and a half each year to half a million.

Automobile Crash Injury Research of New York has figured, on the basis of accidents carefully investigated, that had the cars involved been belt equipped the toll of fatalities and major injuries would be only 40 percent of what it was.

Despite impressive evidence on what excellent insurance against death or grave injuries can be bought with a small cash investment in a seat belt, safety engineers and the motor industry alike have been frankly perplexed by the public's indifference to such equipment in a period of increasingly heavy traffic, higher speeds, irresponsible "hot-rodders," and mounting accident rates. Seat belts were first offered as optional equipment by one manufacturer in 1949 for about $10 but car buyer's response was so negligible the innovation was dropped the following year. In 1955-56 the idea was revived by most major producers but mysteriously failed to sell itself to a public which was as indifferent then as it remains today in the personal safety device.

According to statistics, slightly less than two percent of new models sold during the past three years have been equipped with safety belts and all indications are that the trend is downward. As for older cars, it is known that thousands of seat belts have been sold for installation in them but no reliable final figures are available here. There are now some 60 million cars on the road in this country but only about one in six is provided with seat belts, according to an automotive authority on the subject.

Not only regular flight personnel but those who have used either military or commercial air service know that even with the most reliable aircraft in the world accidents may and do happen. They may be due to mechanical failure, forces of nature, or human error—either by crew personnel of the occupant's aircraft or by the other fellow in another plane. Buckling on a seat belt is a sensible admission that being in a plane does not bestow on an individual any invulnerability. Yet the same person will set off blithely with the wife and youngsters in the family car as if it were guaranteed accident-proof. Considering that the skyways are nothing like as congested as our highways nor swarming with hordes of birdbrained pilots in antiquated, badly serviced aerial jalopies, it is scarcely intelligent or consistent for Air Force personnel to pass up on the ground the safety precautions they would scrupulously observe in flight.

Safety engineers have established by research and experiment that the protection provided by a buckled seat belt is "fantastic," to use the description of one expert.

"A belt keeps you inside a car during an accident," he explained, "and we've found that you have one-fifth the chance of getting killed inside a car that you have if you're thrown out.

"Some people make the objection that a belt worn over the hips can't protect the head. Well, by holding the body in place a belt makes it next to impossible for the head to hit the windshield, where the greatest danger lies. If you wear a belt and have a car with a padded dashboard, it's practically impossible to sustain a serious frontal head injury.

"You may wonder whether I practice what I preach. Well I have a wife and seven children, and a station wagon—*with nine seat belts.*"

One argument raised against seat belts is that they make their users uncomfortable. On the contrary, a poll of regular wearers discloses that they find the belts actually add to motoring comfort. This is particularly true of passengers because, with their belts fastened, they no longer have to brace themselves when a driver takes curves, changes directions, or brakes suddenly at high to moderate speeds.

Another bugaboo contention is that a person strapped in a wrecked automobile has all the cards stacked against his escape if the car catches fire after a crash. In the first place, statistics demonstrate that in every 1,000 motor vehicle accidents fire ensues in only two cases. Hence the odds here are 99.98 percent in the belt wearer's favor. Reaction time in getting out of a belt after an accident is very fast, research shows, a second or two. Any normal child of four or older, physicians have found, has no difficulty once he has been instructed how to fasten and unfasten his belt.

How much should a good belt be able to take in the way of G-stresses? Medical research shows that between a ton and a half to two tons, or from 3,000 to 4,000 pounds, is adequate protection. Of course, belts have been known to break—the ratio runs about two out of every hundred in severe accidents at speeds of 45 m.p.h. or over. Physicians stress, however, that the breaks occur *after* the belt has done the job it was intended for and whatever its former wearer may strike he or she will hit with at least a ton and a half *less* force than would have been the case without the belt.

Another sobering discovery which accident studies have developed is that in a car crash, rear seat riders land harder than those in the front seat. In an accident occurring at 40 m.p.h., for example, a second later the front seat passenger hits while the car is still moving at 25 m.p.h. By the time rear seat riders sail through the air the car momentum has slowed to 10 m.p.h. so when they are stopped by the dashboard or some other obstacle it is very much like crashing into a stationary object.

Several states are now making belts mandatory in vehicles they own, particularly in state police cars. North Carolina troopers are reported highly enthusiastic about the high safety factor the belts give as attested by the fact men have walked away from bad wrecks unscathed or with trivial injuries. Texas State Police didn't wait for officials to decide whether public funds would pay to have belts installed; they dug down in their own pockets and footed the bill themselves.

And, quite apart from safety, there is an immediate dollars and cents angle in some ZI areas for certain insurance companies give a 10 percent discount on premiums to owners of cars which are provided with safety belts for all passengers.

Both officers and enlisted men responsible for pushing the Safety-Begins-on-the-Ground program and for reducing motor vehicle accidents involving Air Force personnel —two missions that are *everybody's* job—would do well to weigh the evidence on the value of seat belts. It is extremely eloquent—if you are interested in guarding yourself and your loved ones against suddent death on a highway or a miserable lifetime of the maimed and disabled.

To paraphrase the advertising slogan: Ask an airman who uses one. Col. John P. Stapp, who has undergone more violent deceleration rocket sled rides than any other human, has this to say:

"I have 9,000-pound test lap belts in my car, and *wouldn't be without them!*"

CHECK YOUR CHANCES

This will happen in 1959. There will be some 30 million auto accidents. They will involve one out of every six men, women, and children in the United States.

At the rate prevailing in 1958 the smashups will slaughter between 35,500 and 36,775 human beings. That total exceeds the total deaths from all causes in the following American wars: Revolution, War of 1812, Mexican, and Spanish-American. It is only slightly short of the number of AEF deaths in WWI.

For every nine mutilated and bloodied bodies which auto smashups deliver to morgue slabs, seven will be the cold remains of car drivers or passengers; two will be recruited from pedestrians.

Besides this death toll, highway accidents will deal disabling injuries to an army of almost 1,400,000 persons. Here again the big percentage of the maimed and crippled will be among the drivers and occupants of motor vehicles.

No sane airman would want to take chances in an aircraft without having a safety belt handy. Yet the chances he will need it in the air are far less than they are when he is at the wheel of his personal car on the ground. Take a tip from the above article.

The White House
Washington, D. C.

November 20, 1958

Each Ground Observer Corps Volunteer,

The inactivation of the Ground Observer Corps on January 31, 1959 will terminate the longest continuous service in peacetime by civilian volunteers engaged in support of our national defense effort.

I commend you for heeding the call to voluntary service in providing a strong air defense against any would-be invader of our skies and for your devotion to the cause of freedom. Our country is indebted to you for your steadfast, unselfish and willing service in a cause of vital importance to our air defense.

I salute you on this occasion for a job well done and ask you for a continuation of your devoted and patriotic service in meeting the challenges of the future.

I hope that you will continue to provide leadership in other fields of civil defense and by your example stimulate many other Americans to share in the task required to sustain our democratic way of life.

Dwight D. Eisenhower

Dwight D. Eisenhower

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